

A preliminary study on the insect fauna of Al-Baha Province, Saudi Arabia, with descriptions of two new species

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Abstract

A preliminary study was carried out on the insect fauna of Al-Baha Province, south-western part of Saudi Arabia. A total number of 582 species and subspecies (few identified only to the genus level) belonging to 129 families and representing 17 orders were recorded. Two of these species are described as new, namely: *Monomorium sarawatensis* Sharaf & Aldawood, **sp. n.** [Formicidae, Hymenoptera] and *Anthrax al-rugibi* El-Hawagry **sp. n.** [Bombyliidae, Diptera]. Another eight species are recorded for the first time in Saudi Arabia, namely: *Xiphoceriana arabica* (Uvarov, 1922) [Pamphagidae, Orthoptera], *Pyrgomorpha conica* (Olivier, 1791) [Pyrgomorphidae, Orthoptera], *Catopsilia florella* (Fabricius, 1775) [Pieridae, Lepidoptera], *Anthrax chionanthrax* (Bezzi, 1926) [Bombyliidae, Diptera], *Spogostylum* near *tripunctatum* Pallas in Wiedemann, 1818 [Bombyliidae, Diptera], *Cononedys dichromatopa* (Bezzi, 1925) [Bombyliidae,

Diptera], *Mydas* sp. [Mydidae, Diptera], and *Hippobosca equina* Linnaeus, 1758 [Hippoboscidae, Diptera]. Al-Baha Province is divided by huge and steep Rocky Mountains into two main sectors, a lowland coastal plain at the west, known as “Tihama”, and a mountainous area with an elevation of 1500 to 2450 m above sea level at the east, known as “Al-Sarat or Al-Sarah” which form a part of Al-Sarawat Mountains range. Insect species richness in the two sectors (Tihama and Al-Sarah) was compared, and the results showed that each of the two sectors of Al-Baha Province has a unique insect community. The study generally concluded that the insect faunal composition in Al-Baha Province has an Afrotropical flavor, with the Afrotropical elements predominant, and a closer affiliation to the Afrotropical region than to the Palearctic region or the Eremic zone. Consequently, we tend to agree with those biogeographers who consider that parts of the Arabian Peninsula, including Al-Baha Province, should be included in the Afrotropical region rather than in the Palearctic region or the Eremic zone.

Keywords

Palaeartic, Afrotropical, Eremic, List, Insect species, Arabian Peninsula, Tihama, Al-Sarah, Al-Sarawat Mountains, new species

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Introduction

Al-Baha Province (Fig. 1) is situated in the south-western part of Saudi Arabia between the Holy Makkah and Asir Regions (Doha 2009), with a population of about 500,000. It is the smallest province in the kingdom of Saudi Arabia (about 10362 km²), situated between longitudes 41°/42° E and latitudes 19°/20° N. This Province is known for its beauty and has many tourist attractions such as forests (about 53 forests), wild life areas, valleys, and mountains. It is characterized by natural tree cover and agricultural plateaus. The region is divided by huge and steep rocky mountains into two main sectors, a lowland coastal plain at the west, known as “Tihama”, and a mountainous area with an elevation of 1500 to 2450 m above sea level at the east, known as “Al-Sarat or Al-Sarah” which form a part of Al-Sarawat Mountains range (Alahmed et al. 2010, Ibrahim and Abdoon 2005).

Al-Baha Province consists of six main districts, four of which are located in Al-Sarah sector beside the downtown “Al-Baha”, i.e., Al-Aqiq, Al-Mandaq, Al-Qura, and Baljurashi, while two of the districts are located in Tihama sector, namely Al-Mekhwa including Dhee Ain Village (The Marble Village), and Qelwa (website: <http://www.albahakfhaa.org/Albaha.htm>).

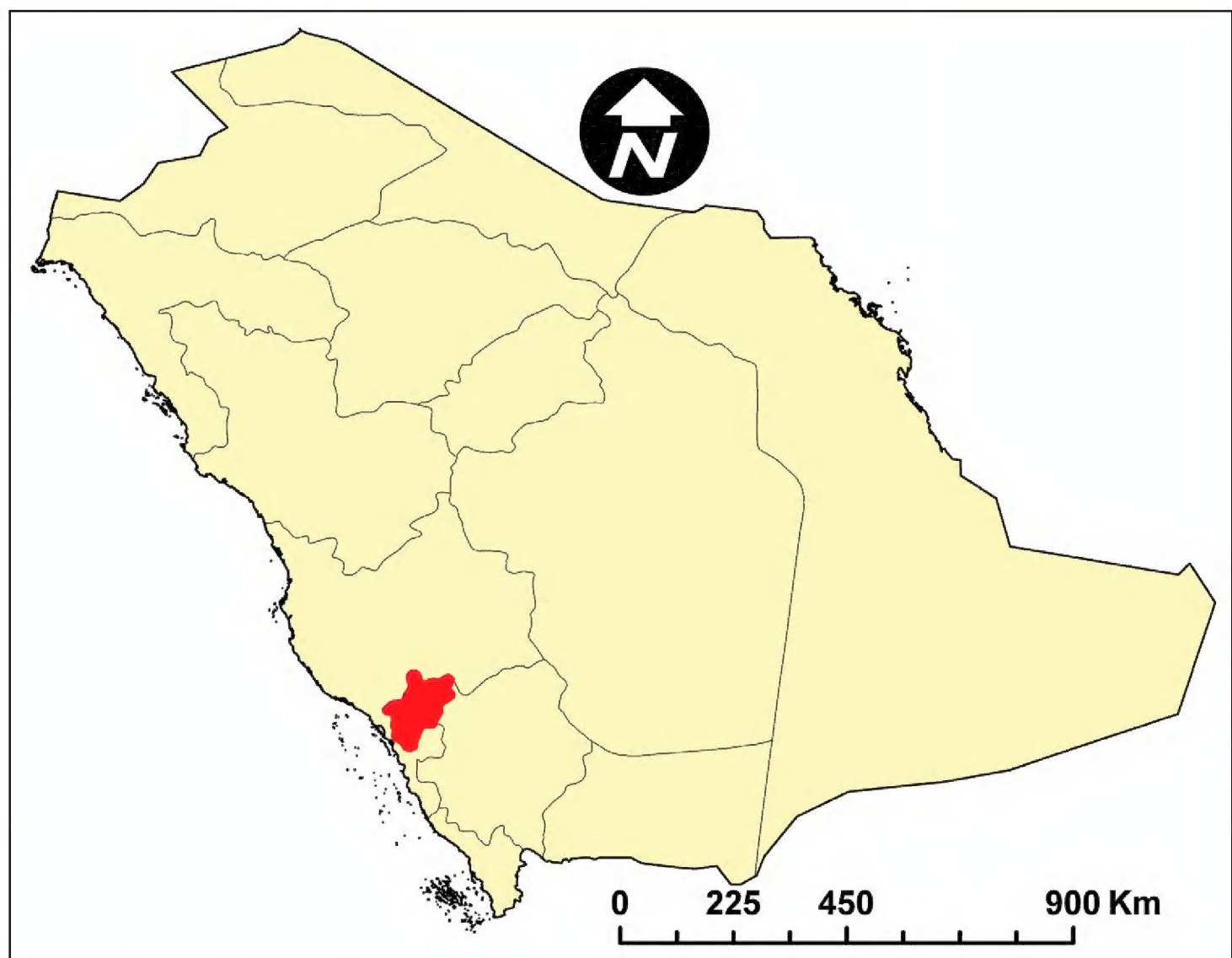


Figure 1. Map of Saudi Arabia showing Al-Baha Province.

The climate in Al Baha Province is greatly influenced by its varying topography. It is generally moderate in summer and cold in winter with average temperatures ranging between 12–23 °C. In Tihama, the climate is hot in summer, warm in spring and mild in winter, with humidity ranging between 52% - 67%, and a rainfall less than 100 mm annually. While in the mountainous area, Al-Sarah, The climate is greatly different from that in Tihama although the two sectors are separated by no more than 30 km. The weather is cooler in summer and winter due to its high altitude. Al-Sarah is exposed to the formation of clouds and fog, and this often happens in winter because of air masses coming from the Red Sea, accompanied by thunderstorms. In spring and summer, the climate is mild and pleasant. Also, rainfall is higher with falls in the range of 229–581 mm. The average rainfall throughout the whole province is 100–250 mm annually (websites: http://www.tititudorancea.com/z/weather_al_baha_saudi_arabia.htm).

The purpose of this paper is to present a preliminary list of insect fauna in Al-Baha Province. Such a study is of particular interest as the study area is a part of the Arabian Peninsula which is thought by many authors to touch three of the world's main zoogeographical regions: the Afrotropical, the Palaearctic, and the Oriental (Hölzel 1998).

Many authors agree that the Afrotropical region covers all of Africa south of the Sahara with the island of Madagascar and the nearby smaller islands constituting a distinct subregion. Many authors also include parts of the Arabian peninsula in the Afrotropical region, but there seems to be no agreement as to how much. Sclater (1858) and Wallace (1876) proposed the classical zoogeographical regions and placed the northern border of the Afrotropics along the Tropic of Cancer. Thus, Al-Baha Province was included in the Afrotropical region, and the Northern limit of the Afrotropical region was placed in the Taif area, about 200 km north to Al-Baha (Hölzel 1998). However, according to Uvarov (1938), Greathead (1980), and Larsen (1984) this area should be united with the central Arabian deserts which are either considered part of the Palaearctic, or by some authors as an autonomous Eremic zone (also called the Saharo-Sindian faunal region). All these facts seem to be reflected somehow on the insect faunal composition in Al-Baha Province as shown in the following results.

Undoubtedly, this study is of particular interest also as the insect fauna of Al-Baha Province has not been studied thoroughly before, and this is the first comprehensive study on the entire insect fauna in the region. For this reason, the following previously established data are intended to serve as a basis for further investigations.

Only a few scattered studies have been carried out on select insect groups particularly in Al-Baha (Doha 2009) or have focused on the description of individual species (Aldawood et al. 2011; Lehrer and Abou-Zied 2008; Sharaf and Aldawood 2011, 2012; Sharaf et al. 2012a, 2012b). However, many studies in select insect groups have been carried out in Saudi Arabia as a whole. Many of these studies have been consulted in order to classify the species collected in the current survey or to determine species previously recorded from Al-Baha, and such studies include the following: Abdullah and Merdan (1995), Alahmed et al. (2010), Aldryhim and Khalil (1996), Amoudi (1993), Amoudi and Leclercq (1992), Balkenohl (1994), Basilewsky (1979), Bílý (1979, 1980,

1982, 1985, 1990), Bolton (1976, 1977, 1980, 1995), Boorman (1989), Brown (2000), Bryant (1957), Büttiker (1980), Chassain (1979, 1983), Coiffait (1979), Collingwood (1985), Collingwood and Agosti (1996), Collingwood and van Harten (2005), Collingwood et al. (1997), Collingwood et al. (2004), Cranston and Judd (1989), Crosskey and Buttiker (1982), Daccordi (1979), Damoiseau (1979), Dawah and Abdullah (2006), Decelle (1979), Deeming (1998), Dlabola (1979, 1980), Doguet (1979, 1984), Doha (2009), Español (1981), Fürsch (1979), Fürsch (1979), Gorochoy (1993), Greathead (1980, 1988), Guichard (1985, 1986, 1988), Hamid and Hamid (1985), Hölzel (1980, 1982, 1983a, 1983b, 1987, 1988, 1998), Holzschuh (1979), Holzschuh and Téocchi (1991) Horstmann (1981), Ibrahim and Abdoon (2005), Kaltenbach (1982), Kaszab (1979, 1981, 1982), Kwieton (1981), Larsen (1979, 1983, 1984), Leclercq (1982, 1986, 2000), Lewis and Buttiker (1980), Linnavuori (1986), Linnavuori and Alâmy (1982), Lopatin (1979, 1982, 1983), Medvedev (1996), Merz and Dawah (2005), Nagel (1982), Paulian (1980), Pittaway (1985), Pont (1991), Popov (1981a, 1981b), Povolný (1980, 1981, 1983, 1986), Richards (1984), Schawaller (1993), Schawaller et al. (2011), Uhmman (1998), Waterston (1980), Wiltshire (1980, 1982, 1983, 1984, 1986, 1988), Winkler (1981), Würmli (1979), and Zunino (1981).

Material and methods

Insect material for the present study was collected extensively from different localities in Al-Baha Province, from 2008 to 2012 by the authors using sweeping and aerial nets, bait traps, beating sheets, digging, hand picking, light traps, malaise traps, pitfall traps, sticky traps, tray sifting, and yellow pan traps. Data from specimens preserved in the insect collections and literature records are also taken into consideration.

All taxa are arranged herein in alphabetical order. Localities and date of collection are included for the purpose of mapping distribution and activity periods of species in the study region.

Abbreviations of museums

- BMNH** Natural History Museum, London, United Kingdom.
CASC California Academy of Science Collection, San Francisco, California, USA.
EFC Efflatoun collection, Entomology Department, Faculty of Science, Cairo University, Egypt.
KSMA King Saud Museum of Arthropods, King Saud University, Riyadh, Kingdom of Saudi Arabia.
MHNG Muséum d'Histoire Naturelle, Geneva, Switzerland.
NHMB Naturhistorisches Museum, Basel, Switzerland.
WMLC World Museum Liverpool, Liverpool, United Kingdom.

Results

A total number of 582 species and subspecies (few identified only to the genus level) belonging to 129 families and representing 17 orders, have been recorded from Al-Baha Province through the present study as follows:

Class: Insecta

Subclass: Pterygota

Division: Exopterygota

Order: Odonata

Suborder: Anisoptera

Family: Aeshnidae

Anax parthenope (Sélys, 1839)

Ghabet Raghdan: Decemper.

Dhee Ain: January-February.

Family: Libellulidae

Trithemis arteriosa (Burmeister, 1839)

Al-Mekhwa: January-May.

Wadi Turabet Zahran: May.

Dhee Ain: May.

* **Collecting method of specimens of the order Odonata:** Aerial nets.

Order: Orthoptera

Suborder: Caelifera

Family: Acrididae

Subfamily: Acridinae

Tribe: Truxalini

Truxalis arabica Uvarov, 1933

Al-Mekhwa: February.

Truxalis grandis Klug, 1830

Al-Mekhwa: March.

Truxalis longicornis (Krauss, 1902)

Al-Mekhwa: February.

Truxalis nasuta (Linnaeus, 1758)

Al-Mekhwa: February.

Truxalis procera Klug, 1830

Al-Mekhwa: February.

Subfamily Cyrtacanthacridinae

Schistocerca gregaria Forsskal, 1775

Common: April-September.

Subfamily: Eyprepocnemidinae

Tribe: Eyprepocnemidini

Heteracris popovi (Uvarov, 1952)

Al-Aqiq: September.

Al-Baha: June.

Heteracris punctata (Uvarov, 1936)

Al-Baha: June.

Subfamily: Gomphocerinae

Leva arabica (Uvarov, 1936)

Baljurashi: May.

Ochrilidia gracilis (Krauss, 1902)

Al-Mekhwa: March.

Ochrilidia sp.

Al-Mekhwa: March.

Stenohippus mundus (Walker, 1871)

Dhee Ain: May.

Subfamily: Oedipodinae

Tribe: Acrotylini

Acrotylus patruelis (Herrich-Schäffer, 1838)

Jebel El-Baher: May-July.

Alhawya: April-July.

Tribe: Epacromiini

Aiolopus simulatrix (Walker, 1870)

Jebel El-Baher: April–August.

Al-Hawya: April-August.

Ghabet Raghdan: April-July.

Ghabet Shahba: May-July.

Wadi Turabet Zahran: May.

Aiolopus thalassinus (Fabricius, 1781)

Al-Mekhwa: April.

Tribe: Sphingonotini

Sphingonotus rubescens (Walker, 1870)

Jebel El-Baher: April–August.

Al-Hawya: April–August.

Ghabet Raghdan: April–July.

Ghabet Shahba: May–July.

Sphingonotus savignyi Saussure, 1884

Jebel El-Baher: April–August.

Al-Hawya: April–August.

Ghabet Raghdan: April–July.

Ghabet Shahba: May–July.

Tribe: Trilophidiini

Trilophidia conturbata (Walker, 1870)

Al-Mekhwa: March–May.

Tribe: Unassigned

Morphacris fasciata (Thunberg, 1815)

Al-Mekhwa: March–May.

Wadi Turabet Zahran: May.

Family: Pamphagidae**Subfamily: Porthetinae**

Xiphoceriana arabica (Uvarov, 1922) [A new record in Saudi Arabia].

Al-Baha: October–May.

Family: Pyrgomorphidae**Subfamily: Pyrgomorphinae****Tribe: Poekilocerini**

Poekilocerus arabicus (Uvarov, 1922)

Jebel El-Baher: May–June.

Wadi Turabet Zahran: May.

Poekilocerus bufonius (Klug, 1832)

Wadi Turabet Zahran: May.

Tribe: Pyrgomorphini

Pyrgomorpha conica (Olivier, 1791) [A new record in Saudi Arabia]

Ghabet Raghdan: February.

Family: Tetrigidae

Subfamily: Tetriginae

Tribe: Tetrigini

Paratettix meridionalis (Rambur, 1838)

Dhee Ain: May.

Suborder: Ensifera

Family: Gryllidae

Subfamily: Gryllinae

Tribe: Gryllini

Acheta arabica Gorochov, 1993

Ghabet Raghdan: April.

Acheta domesticus Linnaeus, 1758

Al-Mekhwa: February-August.

Wadi Turabet Zahran: March.

Gryllus bimaculatus De Geer, 1773

Al-Baha City: September.

Wadi Turabet Zahran: May.

Gryllus sp.

Al-Baha (Jebel El-Baher): December.

Subfamily: Trigonidiinae

Trigonidium cicindeloides Rambur, 1838

Dhee Ain: May.

Family: Tettigoniidae

Subfamily: Conocephalinae

Tribe: Conocephalini

Conocephalus arabicus Uvarov, 1933

Dhee Ain: May.

Conocephalus sp.

Dhee Ain: May.

Subfamily: Tettiginiinae**Tribe: Platycleidini**

Platycleis arabica Popov, 1981

Al-Baha: June.

Wadi Galla: May.

* **Collecting methods of specimens of the order Orthoptera:** Sweeping and aerial nets were the main methods; however, katydids (Tettigoniidae) and crickets (Gryllidae) were collected using light traps as well.

Order: Dermaptera**Family: Forficulidae****Subfamily: Forficulinae**

Forficula auricularia Linnaeus, 1758

Wadi Galla: May.

Order: Embioptera**Family: Embiidae**

Arabembia biarmata Ross, 1981

Wadi Marwan: ?.

* **Collecting method of specimens of the orders Dermaptera and Embioptera:** Pitfall traps.

Order: Psocoptera**Family: Psocidae****Subfamily: Amphigerontiinae**

Blaste arabica New, 1979

Al-Mandaq: April.

* **Collecting method of specimens of the order Psocoptera:** Hand picking.

Order: Isoptera**Family: Kalotermitidae****Subfamily: Bifiditermitinae**

Epicalotermes aethiopicus Silvestri, 1918

Jebel Ibrahim: August.

* **Collecting method of specimens of the order Isoptera:** Digging and hand picking.

Order: Blattodea

Family: Blatellidae

Subfamily: Blattellinae

Blattella germanica (Linnaeus, 1767)

All localities: Throughout the year.

Subfamily: Pseudophyllodromiinae

Balta biquandi Grandcolas, 1994

Wadi Marwani: April.

Family: Polyphagidae

Heterogamisca marmorata Uvarov, 1936

Wadi Galla: May.

Heterogamisca sp.

Al-Baha: September.

* **Collecting methods of specimens of the order Blattodea:** Hand picking and Pitfall traps.

Order: Mantodea

Family: Empusidae

Subfamily: Blepharodinae

Blepharopsis mendica nuda Giglio-Tos, 1917

Al-Baha: April.

Subfamily: Empusinae

Tribe: Empusini

Empusa spinosa Krauss, 1902

Al-Baha: June.

Family: Eremiaphilidae

Eremiaphila arabica Saussure, 1871

Al-Baha: April.

Al-Mekhwa: May-August.

Eremiaphila sp

Ghabet Raghdan: May-July.

Ghabet Shahba: May-August.

Jebel El-baher: April-June.

Family: Mantidae**Subfamily: Amelinae****Tribe: Amelini**

Elaea sp.

Al-Baha City: April.

Subfamily: Mantinae

Hierodula trimacula Saussure, 1870

Adanan: September.

Iris coeca Uvarov, 1931

Adama: September.

Mimomantis sp.

Jebel El-Baher: November.

Subfamily: Miomantinae

Eremoplana infelix Uvarov, 1924

Adanan: September.

Microthespis dmitriewi Werner, 1908

Adanan: June-September.

Rivetina pallida Kaltenbach, 1984

Al-Baha: April.

Subfamily: Oxythespinae

Sinaiella nebulosa Uvarov, 1924

Al-Baha: April.

* **Collecting methods of specimens of the order Mantodea:** Hand picking and Sweeping nets.

Order: Phthiraptera**Suborder: Anoplura****Family: Pediculidae**

Pediculus humanus capitis De Geer, 1767

All localities: Throughout the year.

Family: Polyplacidae

Polyplax brachyrrhyncha Cummings, 1915

Adama: September.

* **Collecting method of specimens of the order Phthiroptera:** Hand picking.

Order: Hemiptera

Family: Alydidae

Mirperus jaculus (Thunberg, 1783)

Dhee Ain: May.

Al-Mekhwa: February.

Wadi Turabet Zahran: May.

Family: Anthocoridae

Subfamily: Anthocorinae

Tribe: Oriini

Orius laevigatus (Fieber, 1860)

Haraja: February.

Family: Cydnidae

Sehirus tibialis (Stal, 1853)

Dhee Ain: May.

Wadi Galla: May.

Family: Dinidoridae

Coridius viduatus (Fabricius, 1794)

Wadi Dahyan: May.

Family: Lygaeidae

Subfamily: Lygaeinae

Lygaeus buettikeri Hamid & Hamid, 1985

Baljurashi: August.

Spilostethus pandurus (Scapula, 1763)

Ghabet Raghdan: May-July.

Ghabet Shahba: May-June.

Dhee Ain: May.

Wadi Turabet Zahran: May.

Subfamily: Orsillinae**Tribe: Nysiini**

Nysius cymoides (Spinola, 1837)

Al-Baha: February-July.

Wadi Turabet zahran: May.

Dhee Ain: May.

Subfamily: Oxycareninae

Oxycarenus hyalinipennis (Costa, 1847)

Al-Baha: May-July.

Ghabet Raghdan: May-August.

Oxycarenus zavattarii Mancini, 1939

Ghabet Raghdan: May-August.

Family: Miridae**Subfamily: Deraeocorinae****Tribe: Deraeocorini**

Deraeocoris martini (Puton, 1887)

Zahran: February.

Subfamily: Mirinae**Tribe: Mirini**

Creontiades pallidus (Rambur, 1842)

Ghabet Raghdan: May.

Megacoelum oculare Wagner, 1957

Adnan: September.

Phytocoris kansisrob Linnavouri, 1975

Adama: September.

Zahran: September.

Taylorilygus pallidulus (Blanchard, 1852)

Zahran: February.

Taylorilygus simonyi (Reuter, 1903)

Al-Mandaq: April.

Subfamily: Phylinae**Tribe: Hallodapini**

Hallodapus costai (Reuter, 1890)

Wadi Ganaah: February.

Laemocoris trimaculatus Linnavouri, 1964

Al-Mandaq: April.

Ruwaba glabriceps Linnavouri & Al-Neamy, 1982

Adama: September.

Tribe: Phylini

Campylomma acaciae Linnavuori, 1961

Zahran: February.

Campylomma pulicariae (Linnavuori, 1986)

Zahran: February.

Campylomma torridum Linnavuori, 1975

Zahran: February.

Psallomimus ornatus Linnavouri, 1957

Zahran: September.

Family: Notonectidae

Subfamily: Anisopinae

Anisops debilis Gerstäcker, 1873

Wadi Turabet Zahran: May.

Anisops sardea Herrich-Schaeffer, 1849

Wadi Turabet Zahran: May.

Family: Pentatomidae

Subfamily: Pentatominae

Tribe: Aelini

Stenozygum coloratum (Klug, 1845)

Ghabet Raghdan: May-August.

Wadi Turabet Zahran: April-July.

Dhee Ain: April-September.

Tribe: Agonoscelidini

Agonoscelis arabica Linnavouri, 1975

Ghabet Raghdan: May.

Wadi Turabet Zahran: June.

Tribe: Eysarcorini

Eysarcoris ventralis (Westwood, 1837)

Dhee Ain: May.

Wadi Genouna: May.

Tribe: Pentatomini

Acrosternum millieri (Mulsant & Rey, 1866)

Dhee Ain: May-July.

Wadi Gala: May-June.

Wadi Genouna: May-July.

Wadi Turabet zahran: May-June.

Tribe: Sciocorini

Sciocoris sp.

Wadi Dahyan: April-July.

Wadi Galla: May-August.

Dhee Ain: May-June.

Family: Reduviidae**Subfamily: Harpactorinae**

Nagusta simonis Puton, 1890

Adama: April.

Sphedanolestes sp.

Al-Mekhwa: February.

Subfamily: Peiratinae

Pirates strepitans Rambur, 1839

Wadi Genouna: May.

Subfamily: Reduviinae

Holotrichius innesi Horvath, 1910

Baljurashi: August.

Reduvius nanus Miller, 1951

Wadi Ganaah: February.

Subfamily: Stenopodainae

Pakesia linnavuorii (Dispons, 1962)

Baljurashi: August.

Family: Rhopalidae

Subfamily: Rhopalinae

Liorhyssus hyalinus (Fabricius, 1794)

Wadi Turabet Zahran: February-May.

Family: Rhyparochromidae

Subfamily: Rhyparochrominae

Tribe: Rhyparochromini

Dieuches mucronatus, (Stal, 1866)

Wadi Turabet Zahran: June.

Family: Scutelleridae

Deroplax silphoides (Thunberg, 1783)

Wadi Dahyan: May.

Odontoscelis sp.

Ghabet Shahba: February-March.

* **Collecting methods of specimens of the order Hemiptera:** Beating sheets and sweeping nets were the main methods; however, some specimens of Lygaeidae and Pentatomidae were collected using light traps as well.

Order: Homoptera

Suborder: Auchenorrhyncha

Family: Cicadellidae

Subfamily: Deltocephalinae

Tribe: Athysanini

Adama buettikeri Dlabola, 1980

Al-Baha: September.

Athysanus sp.

Al-Mekhwa: February-March.

Exitianus fasciolatus (Melichar, 1911)

Wadi Morah: April.

Paraphlepsius sp.

Wadi Dhayan: May.

Texananus sp.

Wadi Turabet Zahran: May-July.

Subfamily: Lassinae**Tribe: Iassini**

Batracomorphus sp.

Dhee Ain: May.

Subfamily: Ledorinae

Petaloccephala turgida Linnavouri, 1962

Wadi Morah: April.

Subfamily: Macropsinae

Macropsis octonotata Dlabola, 1979

Wadi Turabet Zahran: June.

Family: Cicadidae**Subfamily: Cicadinae****Tribe: Cicadini**

Cicada sp.

Al-Baha (place and date unknown).

Family: Cixiidae

Pseudoliarus palestinensis Linnavuori, 1962

Baljurashi (Wadi Marah).

Family: Dictyopharidae**Subfamily: Dictyopharinae**

Dictyophara sp.

Wadi Turabet Zahran: June.

Family: Flatidae

Derisa atratula Melichar, 1902

Dhee Ain: February.

Family: Nogodinidae

Philbyella banajai Dlabola, 1980

Adama: September.

* **Collecting methods of specimens of the order Homoptera:** Beating sheets and sweeping nets were the main methods; however, specimens of Cicadellidae, Cicadidae and Cixiidae were collected using light traps as well.

Division: Endopterygota

Order: Neuroptera

Family: Chrysopidae

Subfamily: Chrysopinae

Tribe: Chrysopini

Dichochrysa amseli Holzel, 1980

Baljurashi (Wadi Marah): April-May.

Dichochrysa venosa (Rambur, 1842)

Baljurashi (Wadi Marah): April-May.

Mallada spadix Holzel, 1988

Baljurashi: April.

Tribe: Belonopterygini

Italochrysa asirensis Hölzel, 1980

Baljurashi (Wadi Marah): April.

Family: Myrmeleontidae

Subfamily: Myrmeleontinae

Tribe: Myrmecaelurini

Myrmecaelurus acerbus (Walker, 1853)

Baljurashi: April.

Tribe: Myrmeleontini

Myrmeleon fasciatus (Navas, 1912)

Baljurashi: April.

Myrmeleon hyalinus Olivier, 1811

Al-Baha City: April-July.

Tribe: Nemoleontini

Creoleon antennatus (Navas, 1914)

Turabet Zahran: April.

Distoleon laticollis (Návas, 1913)

Baljurashi: April.

Al-Baha City: April-July.

Neuroleon lugubris (Návas, 1926)

Turabet Zahran: April.

Tribe: Nesoleontini

Cueta asirica (Holzel, 1982)

Baljurashi: April.

Cueta lineosa (Rambur, 1842)

Turabet Zahran: April.

Cueta pallens (Klug in Ehrenberg, 1834)

Turabet Zahran: April.

Collecting methods of specimens of the order Neuroptera: Light trap was the main method; however, some specimens of Chrysopidae were collected using sweeping nets as well.

Order: Coleoptera

Suborder: Adephaga

Family: Carabidae

Subfamily: Brachininae

Tribe: Brachinini

Brachinus sp.

Wadi Turabet zahran: June.

Pheropsophus africanus (Dejean, 1825)

Wadi Dahyan: May.

Subfamily: Carabinae

Calosoma imbricatum Klug, 1832

El-Hawya: September.

Wadi Turabet Zahran: May.

Subfamily: Harpalinae

Tribe: Cyclosomini

Tetragonoderus arcuatus Dejean, 1829

Wadi Turabet Zahran: May-June.

Dhee Ain: January-May.

Tribe: Galeritini

Galerita africana Dejean, 1825

Wadi Ganaah: February.

Tribe: Harpalini

Stenolophus sp.

Al-Baha: September.

Tribe: Lebiini

Cymindis andreae Menetries, 1832

Al-Baha: September.

Cymindis suturalis Dejean, 1825

Baljurashi (Al-Qamh): January.

Tribe: Sphodrini

Sphodrus leucophthalmus Linne, 1758

Al-Baha: September.

Tribe: Zuphiini

Agastus zuphoides saudiensis Mateu, 1986

Wadi Ganaah: February.

Subfamily: Paussinae

Tribe: Paussini

Paussus cephalotes Raffray, 1885

Jebel Shada: April-June.

Subfamily: Pterostichinae

Tribe: Zabrinini

Amara simplex Dejean, 1828

Baljurashi (Al-Qamh): January.

Zabrus sp.

Ghabet Shahba: February-March.

Subfamily: Scaritinae

Tribe: Clivinini

Clivina collaris (Herbst, 1784)

Dhee Ain: January.

Subfamily: Trechinae**Tribe: Bembidiini**

Bembidion atlanticum megaspilum Walker, 1871

Wadi Turabet Zahran: June.

Zee Ghazal: May.

Elaphropus conspicuous (Schaum, 1863)

Dhee Ain: January–May.

Wadi El-Zarayeb: May.

Elaphropus variabilis (Chaudoir, 1876)

Dhee Ain: January.

Elaphropus sp.

Dhee Ain: January.

Tachys gilvus Schaum, 1863

Dhee Ain: January.

Family: Dytiscidae**Subfamily: Colymbetinae****Tribe: Colymbetini**

Rhantus includes (Walker, 1871)

Al-Mandaq: April.

Subfamily: Dytiscinae**Tribe: Dytiscini**

Hydaticus jucundus Reiche, 1850

Baljurashi: October.

Subfamily: Hydroporinae**Tribe: Hydroporini**

Nebrioporus insignis (Klug, 1834)

Al-Mandaq: April.

Nebrioporus seriatus (Sharp, 1882)

Al-Mandaq: April.

Family: Haliplidae

Haliplus lineatocollis (Marsham, 1802)

Al-Mandaq: April.

Wadi Khoda: November.

Suborder: Polyphaga

Family: Anobiidae

Subfamily: Mesocoleopodinae

Mesocoelopus ingibbosus (Pic, 1924)

Adnan: September

Family: Anthicidae

Subfamily: Anthicinae

Tribe: Anthicini

Anthicus crinitus LaFerté-Sénectère, 1848

Al-Mekhwa: February-March.

Stricticollis peplifer (Marseul, 1879)

Dhee Ain: January.

Tribe: Endomiini

Endomia lefebvrei (Laferte, 1849)

Al-Aqiq Road: January.

Dhee Ain: January.

Tribe: Formicomini

Anthelephila caeruleipennis (LaFerté, 1847)

Al-Mekhwa: February-March.

Wadi Turabah: June.

Anthelephila ninus LaFerté-Sénectère, 1849

Al-Mekhwa: February-March.

Family: Bostrichidae

Subfamily: Apatinae

Tribe: Apatini

Xylomedes coronata (Marseul, 1883)

El-Hawya: September.

Subfamily: Bostrichinae

Tribe: Xyloperthini

Enneadesmus trispinosus (Olivier, 1795)

Wadi Turabet Zahran: June.

Xyloperthella picea (Olivier, 1790)

Dhee Ain: August.

Family: Buprestidae**Subfamily: Buprestinae****Tribe: Anthaxiini**

Anthaxia kneuckeri Obenberger, 1920

Al-Mandaq: September.

Subfamily: Polycestinae

Acmaeodera elevata (Klug, 1829)

Dhee Ain: May.

Acmaeodera polita (Klug, 1829)

El-Hawya: May.

Wadi Galla: May.

Family: Cerambycidae

Mourglia conspicua Holzschuh, 1993

Dhee Ain: May.

Family: Chrysomelidae**Subfamily: Bruchinae****Tribe: Pachymerini**

Caryedon sp.

Al-Mekhwa: February.

Subfamily: Cryptocephalinae**Tribe: Clytrini**

Aetheomorpha seminigra pumilio Lacordaire, 1848

Al-Baha: May.

Tribe: Cryptocephalini

Cryptocephalus sp.

Al-Mekhwa: February.

Subfamily: Galerucinae

Tribe: Alticini

Chaetocnema pulla Chapuis, 1879

Al-Mekhwa: February.

Chaetocnema tibialis (Illiger, 1807)

Al-Mekhwa: February.

Phyllotreta cheiranthi Weise, 1903

Al-Baha: May.

Podagrica pallidicolor Pic, 1909

Wadi Ganaah: February.

Psylliodes persica Allard, 1867

Al-Baha: May.

Tribe: Galerucini

Diorhabda octocostata Gahan, 1896

Ghabet Raghdan: May.

Family: Cleridae

Subfamily: Clerinae

Opilo longipilis Fairmaire, 1892

Wadi Dhyian: September.

Subfamily: Korynetinae

Necrobia rufipes De Geer, 1775

Wadi Galla: May.

Family: Coccinellidae

Subfamily: Coccinellinae

Tribe: Coccinellini

Hippodamia variegata (Goeze, 1777)

Al-Baha: May-June.

Wadi Turabet Zahran: May-June.

Subfamily: Scymninae

Tribe: Scymnini

Scymnus syriacus Marsuel, 1868

Al-Mekhwa: February-April.

Family: Curculionidae**Subfamily: Apioninae****Tribe: Apionini**

Thymapion solarii (Wagner, 1908)

Jebel Ibrahim: September.

Thymapion subrecticollae (Voss, 1961)

Wadi Gaanah: February.

Tribe: Exapiini

Apiotherium dongollanum (Wagner, 1910)

Jebel Ibrahim: September.

Tribe: Kalcapiini

Afrothymapion tangenum (Hartmann, 1897)

Jebel Ibrahim: September.

Tribe: Piezotrachelini

Pseudoconapion mirei (Hoffmann, 1962)

Jebel Ibrahim: September.

Pseudoconapion segne (Faust, 1895)

Jebel Ibrahim: September.

Subfamily: Curculioninae**Tribe: Smicronychini**

Sharpia rubida (Rosenhauer, 1856)

Al-Baha: May.

Family: Dryopidae

Dryops sulcipennis (Costa, 1883)

Wadi Turabet Zahran: June.

Family: Elateridae**Subfamily: Agrypninae**

Lanelater notodonta (Latreille, 1827)

El-Hawya: September.

Subfamily: Cardiophorinae

Tribe: Cardiophorini

Craspedostethus wittmeri Chassain, 1979

Adnan: August.

Family: Hydrophilidae

Laccobius subpictus erlangeri (Regimbart, 1905)

Wadi Gaanah: February.

Laccobius praecipuus Kuwert, 1891

Al-Mandaq: April.

Khoda: September.

Wadi Gaanah: February.

Wadi Noval: September.

Family: Meloidae

Subfamily: Meloinae

Tribe: Mylabrini

Mylabris calida (Pallas, 1782)

Jebel El-Baher: May-July.

Ghabet Shahba: April-August.

Wadi Turabet Zahran: May.

Subfamily: Nemognathinae

Tribe: Nemognathini

Nemognatha chrysomelina (Fabricius, 1775)

Wadi Gala: May.

Zonitoschema rubricolor Pic, 1924

Baljurashi: August.

Family: Melyridae

Melyris sp.

El-Hawya: May.

Dhee Ain: May.

Family: Mordellidae**Subfamily: Mordellinae****Tribe: Mordellini**

Mediimorda bipunctata (Germar, 1827)

Jebel El-Baher: May-June.

Family: Mycetophagidae**Subfamily: Mycetophaginae**

Typhaea stercorea (Linnaeus, 1758)

Dhee Ain: January.

Family: Prionoceridae

Idgia asirensis Wittmer, 1980

Wadi Gala: May.

Wadi Turabet Zahran: May-October.

Family: Scarabaeidae**Subfamily: Aphodiinae****Tribe: Aphodiini**

Aphodius andreinii Balthasar, 1939

Wadi Ganaah: February.

Aphodius lividus (Olivier, 1789)

Adama: September.

Wadi Ganaah: February.

Aphodius schusteri Balthasar, 1935

Wadi Ganaah: February.

Tribe: Eupariini

Ataenius garamas Peyerimhoff, 1929

Adama: September.

Tribe: Psammodiini

Granulopsammodius plicatulus (Fairmaire, 1892)

Wadi Al-Uqdah: February.

Leiopsammodius laevicollis (Klug, 1845)

Wadi Ganaah: February.

Rhyssemus Asperocostatus Fairmaire, 1982

Adanan: September.

Wadi Al-Uqdah: February.

Wadi Ganaah: February.

Rhyssemus brevitarsis Pittino, 1984

Wadi Ganaah: February.

Rhyssemus buettikeri Pittino, 1984

Wadi Ganaah: February.

Rhyssemus coluber Mayet, 1887

Wadi Ganaah: February.

Wadi Shumran: February.

Rhyssemus granosus (Klug & Erichson, 1842)

Adama: September.

Adanan: September.

Wadi Ganaah: February.

Wadi Shumran: February.

Dhee Ain: October.

Rhyssemus rubeolus Harold, 1871

Wadi Ganaah: February.

Rhyssemus saoudi Pittino, 1984

Adama: september.

Adanan: September.

Dhee Ain: May.

Subfamily: Cetoniinae

Homothyrea thoracica Schaum, 1841

Al-Aqiq Road: January.

Dhee Ain: January.

Pachnoda leclercqi Rigout, 1985

Wadi Galla: May.

Pachnoda thoracica Fabricius, 1775

Ghabet Shahba: May-December.

Wadi Turabet Zahran: May.

Dhee Ain: May.

Subfamily: Scarabaeinae

Onthophagus transcaspicus Koenig, 1888

Adnan: August-September.

Baljurashi: August-September.

Family: Scirtidae**Subfamily: Scirtinae**

Cyphon laevipennis Tournier, 1868

Wadi Turabet Zahran: July-October.

Family: Silvanidae**Subfamily: Silvaninae**

Oryzaephilus surinamensis (Linnaeus, 1758)

Dhee Ain: May.

Family: Staphylinidae**Subfamily: Paederinae****Tribe: Paederini**

Paederus alfieri Koch, 1934

Dhee Ain: April-June

Wadi Galla: May.

Paederus sp.

Al-Mekhwa: February.

Family: Tenebrionidae**Subfamily: Alleculinae****Tribe: Alleculini**

Mycetocharina wittmeri Muche, 1982

Adnan: September.

Prionychus denticulatus Muche, 1982

Adnan: September.

Subfamily: Pimeliinae**Tribe: Adesmiini**

Adesmia cancellata cancellata (Klug, 1830)

Al-Baha: September.

Adnan: September.

Tribe: Stenosini

Stenosis comata Reiche & Saulcy, 1857

Baljurashi (Al-Qama'): January

Tribe: Pimeliini

Thriptera crinita Klug, 1830

Al-Baha City (El-Hawya): September.

Wadi Galla: May.

Wadi Turabet Zahran: May.

Thriptera kraatzi Haag, 1876

Dhee Ain: January.

Tribe: Sepidiini

Sepidium cristatum Fabricius, 1775

Baljurashi: August.

Subfamily: Tenebrioninae

Tribe: Blaptini

Blaps kollari kollari Seidlitz, 1896

Adnan: September.

Tribe: Opatrini

Anemia brevicollis (Wollaston, 1864)

Wadi Turabet Zahran: May.

Gonocephalum strigosum (Reiche, 1850)

Al-Aqiq Road: January.

Family: Thanerocleridae

Thaneroclerus buqueti (Lefebvre, 1835)

Ghabet Amadan: May.

Family: Zopheridae

Subfamily: Colydiinae

Tribe: Sychitini

Bitoma siciana (Pascoe, 1863)

Wadi Al-Zarayeb: April.

* **Collecting methods of specimens of the order Coleoptera:** Pitfall traps, especially for Carabidae and Tenebrionidae; beating sheets, especially for Anobiidae and Curculionidae; and sweeping nets, especially for Chrysomelidae, Cerambycidae, BUPrestidae and other families were the main methods; however, specimens of Dytiscidae were collected using light traps.

Order: Trichoptera
Family: Hydroptilidae
Subfamily: Hydroptilinae
Tribe: Hydroptilini

Hydroptila cruciata Ulmer, 1912
Wadi Ilyab: November.

Family: Leptoceridae
Subfamily: Leptocerinae
Tribe: Setodini

Setodes alalus Mosely, 1948
Wadi Arida: September.
Wadi Ganaah: February.
Wadi Ilyab: November.

Family: Philopotamidae
Subfamily: Chimarrinae

Chimarra saudia Malicky, 1986
Wadi Arida: September.

* **Collecting methods of specimens of the order Trichoptera:** Light traps.

Order: Lepidoptera
Suborder: Rhopalocera
Family: Hesperidae
Subfamily: Hesperinae

Pelopidas thrax thrax (Hubner, 1821)
Al-Mikhwa: January-April.

Family: Lycaenidae
Subfamily: Lycaeninae
Tribe: Lycaenini

Lycaena phlaeas (Linnaeus, 1761)
Ghabet Raghdan: April-August.

Subfamily: Polyommatainae

Tribe: Lycaenesthini

Anthene sp.

Al-Baha: June.

Tribe: Polyommadini

Azanus sp.

Wadi Turabet Zahran: November.

Euchrysops osiris (Hopffer, 1855)

Ghabet Shahba: May-June.

Lepidochrysops pittawayi Larsen, 1983

Adnan: February-April.

Tarucus theophrastus Fabricius, 1793

Al-Mikhwa: January-March.

Wadi Turabet Zahran: November.

Zizula hylax Fabricius, 1775

Al-Mikhwa: January-March.

Subfamily: Theclinae

Myrina silenus (Fabricius, 1775)

Dhee Ain: February-March.

Family: Nymphalidae

Subfamily: Charaxinae

Tribe: Charaxini

Charaxes bernstorffi Rydon, 1982

Ghabet Shahba: May.

Charaxes hansali Felder, 1867

Ghabet Raghdan: May-June.

Subfamily: Danainae

Danaus chrysippus (Linnaeus, 1758)

Al-Mekhwa: January-March.

Dhee Ain: June-November.

Dhee Ain: October.

Subfamily: Heliconiinae

Argynnis sp.

Dhee Ain: December-January.

Subfamily: Nymphalinae**Tribe: Junoniini**

Junonia hierta Fabricius, 1798

Ghabet Shahba: May-July.

Tribe: Nymphalini

Vanessa (Cynthia) cardui Linnaeus, 1758

Al-Baha (Jebel El-Baher): March-July.

Ghabet Raghdan: March-July.

Wadi Turabet Zahran: November.

Subfamily: Satyrinae

Lasiommata felix (Warnecke, 1929)

Ghabet Shahba: May.

Family: Papilionidae**Subfamily: Papilioninae**

Papilio demoleus demoleus Linnaeus, 1758

Al-Mekhwa: March-April.

Dhee Ain: January.

Wadi Turabet Zahran: December.

Papilio sp.

Ghabet Raghdan: May-June.

Family: Pieridae**Subfamily: Coliadinae**

Catopsilia florella (Fabricius, 1775) [A new record in Saudi Arabia]

Al-Mekhwa: November.

Eurema hecabe (Linnaeus, 1758)

Wadi Turabet Zahran: October.

Subfamily: Pierinae

Tribe: Anthocharini

Euchloe belemia (Esper, 1800)

Amadan: October.

Tribe: Colotini

Colotis amata (Fabricius, 1775)

Al-Mekhwa: January-March.

Dhee Ain: January.

Colotis antevippe zera (Lucas, 1852)

Al-Mekhwa: February-March.

Dhee Ain: February-March.

Colotis दौरا (Klug, 1829)

Al-Mekhwa: November.

Colotis danae (Fabricius, 1775)

Al-Mekhwa: January-February.

Dhee Ain: October.

Colotis ephyia (Klug, 1829)

Al-Mekhwa: November.

Colotis eucharis Fabricius, 1775

Dhee Ain: March.

Colotis evagore (Klug, 1829)

Al-Mekhwa: November.

Colotis halimede (Klug, 1829)

Dhee Ain: October.

Colotis liagore (Klug, 1829)

Dhee Ain: October-December.

Colotis protomedia (Klug, 1829)

Al-Mekhwa: March.

Ghabet Raghdan: May.

Nepheronia bouquetii (Boisduval, 1836)

Al-Mekhwa: March.

Dhee Ain: February-June.

Tribe: Pierini

Belenois aurota (Fabricius, 1793)

Al-Baha (Jebel El-Baher): May-June.

Ghabet Raghdan: May-July.

Madais fausta fausta (Olivier, 1804)

Dhee Ain: February.

Pieris krueperi (de Niceville, 1884)

Amadan: October.

Pieris rapae (Linnaeus, 1758)

Al-Mekhwa: January – June.

Al-Baha: March – August.

Dhee Ain: February – July.

Pinacopteryx eriphia (Godart, 1819)

Aqabet Al-Baha-Tihama: April-May.

Pontia daplidice daplidice Linnaeus, 1756

Ghabet Raghdan: May-July.

Pontia glauconome (Klug, 1829)

Ghabet Raghdan: May-October.

Suborder: Heterocera

Family: Arctiidae

Subfamily: Arctiinae

Apisa canescens Arabica Warnecke, 1934

Baljurashi: August.

Hyphantria cunea Drury, 1773

Al-Baha (G. El-Baher): May.

Utetheisa pulchella (Linnaeus, 1758)

Al-Mekhwa: March.

Subfamily: Lithosiinae

Pelosia arabica (Rebel, 1907)

Baljurashi: September.

Siccia arabica Wiltshire, 1983

Baljurashi: August.

Family: Carposinidae

Metacosmesis xerostola Diakonoff, 1983

Baljurashi (Wadi Marah): April.

Family: Choreutidae

Tebenna micalis Mann, 1857

Baljurashi (Wadi Marah): September.

Family: Cossidae

Eremocossus vaulogeri jordana (Staudinger, 1897)

Baljurashi: September.

Mormogystia reibellii (Oberthür, 1876)

Adnan: May.

Family: Gelechiidae

Subfamily: Gelechiinae

Tribe: Gelechiini

Ephysteris promptella Staudinger, 1859

Baljurashi (Wadi Marah): April.

Ephysteris subdiminutella Stainton, 1867

Baljurashi (Wadi Marah): April.

Phthorimaea operculella Zeller, 1873

Baljurashi (Wadi Marah): April.

Scrobipalpa asiri Povolny, 1980

Baljurashi (Wadi Marah): April.

Scrobipalpa biljurshi Povolny, 1980

Baljurashi (Wadi Marah): April.

Scrobipalpa ergasima (Meyrick, 1916)

Baljurashi (Wadi Marah): April.

Scrobipalpa vicaria (Meyrick, 1921)

Baljurashi (Wadi Marah): April.

Family: Geometridae

Subfamily: Ennominae

Cleora pavlitzkiae Fletcher, 1958

Baljurashi: April.

Coenina collenettei Prout, 1931

Baljurashi: September.

Epigynopteryx guichardi Wiltshire, 1982

Baljurashi: August.

Odontopera integraria Guenée, 1858

Baljurashi: August-September.

Oreometra fifae Wiltshire, 1986

Baljurashi: April.

Xylopteryx guichardi Wiltshire, 1982

Baljurashi: September.

Zamarada hyalinaria Guenée, 1858

Baljurashi: September.

Zeuctoboarmia syntropha (Prout, 1931)

Baljurashi: September.

Subfamily: Geometrinae

Microloxia herbaria Hübner, 1808

Jebel Ibrahim: August-September.

Prasinocyma eremica Wiltshire, 1980

Baljurashi: September.

Subfamily: Larentiinae

Calliclystis lita (Prout, 1916)

Baljurashi: April.

Chloroclystis hawkinsi Wiltshire, 1982

Baljurashi: September.

Orthonama obstipata (Fabricius, 1794)

Baljurashi: September.

Subfamily: Sterrhinae

Chlorerythra rubriplaga sinaica Wiltshire, 1949

Baljurashi: September.

Idaea hesuata Wiltshire, 1983

Baljurashi: September.

Idaea sordida sordida (Rothschild, 1913)

Al-Mandaq: September.

Rhodometra kikiae Wiltshire, 1982

Jebel Ibrahim: September.

Scopula luridata Zeller, 1847

Baljurashi: April.

Jebel Ibrahim: September.

Scopula sarfaitensis Wiltshire, 1982

Baljurashi: April.

Traminda rufistrigata Hampson, 1896

Jebel Ibrahim: August-September.

Traminda neptunaria Guenée, 1858

Baljurashi: June.

Family: Lasiocampidae

Dendrolimus lendereri Kocak, 1981

Baljurashi: September.

Pachypasa sultani Wiltshire, 1986

Baljurashi: April.

Stoermeriana omana Freina&Witt, 1988

Baljurashi: April.

Streblote acaciae Klug, 1829

Baljurashi: April.

Family: Limacodidae

Coenobasis farouki Wiltshire, 1947

Baljurashi: August.

Family: Lymantriidae

Subfamily: Lymantriinae

Tribe: Lymantriini

Euproctis fasciata Walker, 1855

Ratha: August.

Laelia xyleutis Hampson, 1905

Baljurashi: April-September.

Lymantriades arabica (Hampson, 1910)

Baljurashi: August-September.

Naroma varipes Walker, 1865

Baljurashi: September.

Family: Noctuidae

Subfamily: Acontiinae

Ozarba atrifera Hampson, 1910

Baljurashi: August.

Subfamily: Acronictinae

Ariathisa abyssinia Guenée, 1852

Baljurashi: August.

Subfamily: Bryophilinae

Cryphia pittawayi Wiltshire, 1986
Baljurashi: September.

Subfamily: Catocalinae

Antarchaea magalium Townsend, 1958
Baljurashi: July.
Hypotacha ochribasalis Hampson, 1896
Adnan: September.
Lyncestis mimica Gaede, 1939
Baljurashi: August.
Scodionyx mysticus Staudinger, 1899
Baljurashi: April.
Sphingomorpha chlorea Cramer, 1777
Baljurashi: April.
Thria robusta Walker, 1857
Baljurashi: November.
Ophiuche masurialis Guenée, 1854
Wadi Gaanah: February.

Subfamily: Erebinae

Tathorhynchus philbyi Wiltshire, 1986
Baljurashi: July.

Subfamily: Eriopinae

Callopietria latreillei (Duponchel, 1827)
Baljurashi: July.
Wadi Al-Uqdah: February.

Subfamily: Eustrotiinae

Eublemma bifasciata (Moore, 1881)
Wadi Al-Uqdah: February.
Eublemma buettikeri Wiltshire, 1980
Baljurashi: September.
Eublemma ecthaemata Hampson, 1896
Baljurashi: September.

Eublemma khalifa nejdi (Wiltshire, 1961)

Baljurashi: September.

Eublemma mesophaea Hampson, 1910

Jebel Ibrahim: September.

Eublemma parva (Hübner, 1808)

Al-Baha: August.

Jebel Ibrahim: September.

Subfamily: Hadeninae

Agrotis herzogi Rebel, 1911

Al-Baha: January-June.

Agrotis ipsilon (Hufnagel, 1766)

Al-Baha: January-June.

Al-Mekhwa: December-February.

Agrotis medioatra Hampson, 1918

Baljurashi: September.

Caradrina aldegaietheri Wiltshire, 1986

Baljurashi: September.

Caradrina localis Wiltshire, 1986

Baljurashi: September.

Bani Sar: February.

Caradrina stenoeca Wiltshire, 1986

Baljurashi: September.

Haderonia proximoides Wiltshire, 1982

Baljurashi: September.

Mythimna affinis (Warnecke, 1930)

Baljurashi: July.

Mythimna octogesima Wiltshire, 1982

Baljurashi: August.

Sideridis chersotoides Wiltshire, 1956

Baljurashi: September.

Spodoptera ciliun Guenée, 1852

Baljurashi: September.

Spodoptera exigua (Hubner, 1808)

Al-Baha: January.

Spodoptera littoralis (Boisduval, 1833)

Al-Baha: February-July.

Ghabet Raghdan: May-June.

Al-Mekhwa: December-April.

Spodoptera mauritia (Boisduval, 1833)

Al-Baha: February-July.

Subfamily: Plusiinae

Trichoplusia vittata (Wallengren, 1856)

Beljurashi: July.

Subfamily: Thiacidinae

Thiacidias adnanensis (Wiltshire, 1980)

Adnan: September.

Thiacidias cerurodes cerurodes (Hampson, 1916)

Al-Baha: September.

Family: Oecophoridae**Subfamily: Depressariinae**

Agonopterix subpropinquella Stainton, 1849

Baljurashi (Wadi Marah): April.

Depressaria discipunctella Herrich-Schäffer, 1854

Baljurashi (Wadi Marah): April.

Subfamily: Unassigned

Amseloecia arabica Povolny, 1983

Baljurashi (Wadi Marah): April.

Family: Pterophoridae**Subfamily: Agdistinae**

Agdistis obstinata Meyrick, 1920

Baljurashi (Wadi Marah): April.

Subfamily: Pterophorinae**Tribe: Oxyptilini**

Megalorhipida defectalis Walker, 1864

Baljurashi: May.

Stangeia siceliota (Zeller, 1847)

Baljurashi (Wadi Marah): April.

Family: Scythrididae

Catascythriss keberella Amsel, 1935

Baljurashi (Wadi Marah): April.

Family: Sphingidae

Subfamily: Macroglossinae

Tribe: Macroglossini

Daphnis nerii (Linnaeus, 1758)

Al-Baha (Jebel El-Baher): May.

Hippotion celerio (Linnaeus, 1758)

Al-Baha: May.

Dhee Ain: April.

Hyles livornica (Esper, 1780)

Al-Baha (Jebel El-Baher): May-June.

Ghabet Raghdan: June.

Al-Mandaq: May.

Al-Mekhwa: April-June.

Subfamily: Sphinginae

Tribe: Acherontiini

Acherontia atropos (Linnaeus, 1758)

Al-Baha (El-Hawya): October.

Agrius convolvuli (Linnaeus, 1758)

Al-Baha: November-April.

Tribe: Sphingini

Macropoliana asirensis Wiltshire, 1980

Al-Baha: February.

Family: Symmocidae

Apiletria asirica Gozmany, 1982

Baljurashi (Wadi Marah): April.

Family: Thaumetopoeidae

Thaumetopoea jordana Staudinger, 1895

Jebel Ibrahim: September.

Family: Tineidae

Subfamily: Hapsiferinae

Hapsifera punctata Petersen, 1961

Baljurashi (Wadi Marah): April.

Hapsiferona glareosa Meyrick, 1912
Baljurashi (Wadi Marah): April.

Subfamily: Perissomasticinae

Neoepiscardia islamella Petersen & Gaedike, 1982
Baljurashi (Wadi Marah): April.

Perissomastix amseli (Petersen, 1959)
Baljurashi (Wadi Marah): April.

Perissomastix asiriella Petersen & Gaedike, 1982
Baljurashi (Wadi Marah): April.

Perissomastix nigriceps Warren & Rothschild, 1905
Baljurashi (Wadi Marah): April.

Family: Tortricidae

Subfamily: Olethreutinae

Tribe: Eucosmini

Strepsicrates cryptosema Diakonoff, 1983
Baljurashi (Wadi Marah): April.

Tribe: Grapholitini

Cydia dissulta Diakonoff, 1983
Baljurashi (Wadi Marah): April.

Cydia melanoptycha Diakonoff, 1983
Baljurashi (Wadi Marah): April.

Selania resedana (Obraztsov, 1959)
Baljurashi (Wadi Marah): April.

Tribe: Olethreutini

Eccopsis wahlbergiana Zeller, 1852
Baljurashi (Wadi Marah): August.

Subfamily: Tortricinae

Tribe: Archipini

Procris ammina Diakonoff, 1983
Baljurashi (Wadi Marah): August.

Tebenna micalis (Mann, 1857)
Baljurashi (Wadi Marah): April.

Family: Zygaenidae

Subfamily: Zygaeninae

Reissita simonyi (Rebel, 1899)

Al-Mikhwa: March-May.

* **Collecting methods of specimens of the order Lepidoptera:** Aerial nets for butterflies (suborder: Rhopalocera), and light traps for moths (suborder: Heterocera).

Order: Diptera

Suborder: Nematocera

Family: Ceratopogonidae

Culicoides kingi (Austen, 1912)

Al-Mekhwa: May.

Bejurashi: June.

Culicoides newsteadi Austen, 1921

Al-Mekhwa: May.

Beni Hassan: June.

Culicoides oxystoma Kieffer, 1910

Ghabet Raghdan: September.

Family: Chironomidae

Subfamily: Tanypodinae

Procladius (Holotanypus) apicalis (Kieffer, 1918)

Wadi Al-Uqdah: February-March.

Wadi Diyhan: March.

Wadi Shumruk: April.

Ablabesmyia (Ablabesmyia) longistyla Fittkau, 1962

Adnan: September.

Wadi Diyhan: March.

Wadi Ilyab: March.

Conchapelopia trifascia (Freeman, 1954)

Adnan: September.

Larsia rutsburuiemis (Goetghebuer, 1935)

Al-Mandaq: April.

Larsia teesdalei (Freeman, 1955)

Wadi Ilyab: February.

Paramerina vaillanti Fittkau, 1962

Wadi Ibrahim: August.

Al-Mandaq: April.

Subfamily: Orthoclaadiinae

Paraphaenocladus impensus (Walker, 1856)

Wadi Diyyhan: March.

Subfamily: Chironominae**Tribe: Chironomini**

Dicrotendipes peringueyanus Kieffer, 1924

Adnan: September.

Dicrotendipes sudanicus (Freeman, 1957)

Adnan: September.

Wadi Diyyhan: March.

Paratendipes nubilipennis Freeman, 1957

Adnan: September.

Wadi Ibrahim: August.

Paratendipes nudisquama (Edwards, 1929)

Adnan: September.

Wadi Diyyhan: March.

Wadi Ilyab: February.

Polypedilum (Pentapedilum) wittei Freeman, 1955

Al-Foqa: September.

Polypedilum (Polypedilum) buettikeri Cranston, 1989

Wadi Ilyab: February.

Polypedilum (Polypedilum) tana Cranston and Judd, 1989

Adnan: September.

Stictochironomus puripennis (Kieffer, 1921)

Jebel Ibrahim: September.

Wadi Ilyab: February.

Tribe: Tanytarsini

Cladotanytarsus pseudomancus (Goetghebuer, 1934)

Al-Mandaq: April.

Al-Baha: February.

Cladotanytarsus reductus (Freeman, 1954)

Adnan: September.

Jebel Ibrahim: September.

Rheotanytarsus ringei Lehmann, 1970

Wadi Ilyab: February.

Tanytarsus mcmillani Freeman, 1958

Wadi Diyyhan: March.

Tanytarsus trifidus Freeman, 1958

Wadi Diyhan: March.

Wadi Ibrahim: August.

Virgatanytarsus nigricornis (Goetghebuer, 1935)

Wadi Diyhan: March.

Family: Corethrellidae

Corethrella buettikeri Cranston, 1980

Adnan (W. Iwrakh): September.

Family: Culicidae

Subfamily: Anophelinae

Anopheles multicolor Cambouliu, 1902

All regions of Al-Baha: Throughout the year.

Anopheles sergentii (Theobald, 1907)

Al-Baha: June - August.

Al-Mandaq: July.

Subfamily: Culicinae

Aedes caspius (Pallas, 1771)

Al-Mekhwa: Throughout the year.

Al-Baha: Throughout the year.

Aedes vittatus (Bigot, 1861)

Al-Baha: Throughout the year.

Culex pipiens Linnaeus, 1758

All regions of Al-Baha: Throughout the year.

Family: Psychodidae

Subfamily: Phlebotomine

Phlebotomus (Paraphlebotomus) alexandri Sinton, 1928

Al-Dafeer: April to August.

Al-Mandaq: March to November.

Phlebotomus (Adlerius) arabicus Theodor, 1953

Al-Baha: April to December.

Al-Dafeer: April to December.

Al-Mandaq: June to December.

Al-Mekhwa: July to December.

Phlebotomus (Phlebotomus) bergeroti Parrot, 1934

All localities: March to December.

Phlebotomus (Larroussius) orientalis Parrot, 1936

Al-Mekhwa: October to December.

Phlebotomus (Phlebotomus) papatasi (Scopoli, 1786)

Al-Dafeer: April to December.

Phlebotomus (Paraphlebotomus) sergenti Parrot, 1917

Al-Aqiq: April to November.

Al-Baha: April to December.

Al-Dafeer: April to December.

Al-Mekhwa: May to November.

Sergentomyia (Sergentomyia) antennata (Newstead, 1912)

Al-Mandaq: April.

Sergentomyia (Sintonius) clydei (Sinton, 1928)

Beni Hassan: April.

Sergentomyia (Sintonius) tiberiadis (Adler, Theodor & Lourie, 1930)

Al-Mandaq: March to November.

Family: Simuliidae

Subfamily: Simuliinae

Tribe: Simuliini

Simulium nili Gibbins, 1934

Baljurashi: April.

W. Shumruk: April.

Family: Tipulidae

Subfamily Tipulinae

Tribe: Tipulini

Tipula sp.

Ghabet Raghdan: November.

Suborder: Brachycera

Family: Asilidae

Subfamily: Laphriinae

Tribe: Ctenotini

Lamyra vorax Loew, 1858

Ghabet Shahba: June.

Family: Bombyliidae

Subfamily: Bombyliinae

Tribe: Bombyliini

Anastoechus trisignatus (Portschinsky, 1881)

Ghabet Raghdan: May-June.

Bombylius pallidipilus Greathead, 1967

Ghabet Raghdan: May-June.

Ghabet Shahba: May-June.

Subfamily: Toxophorinae

Tribe: Gerontini

Geron sp.

Ghabet Shahba: May-june.

Ghabet Raghdan: May-June.

Subfamily: Anthracinae

Tribe: Anthracini

Anthrax alruqibi El-Hawagry sp. n.

Al-Mekhwa: March.

Aqabet Al-Baha-Tihama: April.

Ghabet Raghdan: May.

Ghabet Shahba: June.

Anthrax chionanthrax (Bezzi, 1926) [A new record in Saudi Arabia]

Al-Mekhwa: March-April.

Anthrax ricardoe Greathead, 2003

Baljurashi: September.

Ghabet Raghdan: June.

Ghabet Shahba: May-June.

Anthrax sticticus Klug, 1832

Al-Mekhwa: March-April.

Spogostylum dagomba (Bowden, 1964)

Aqabet Al-Baha-Tihama: April-May.

Spogostylum ocyale (Wiedemann, 1828)

Al-Mekhwa: April.

Spogostylum niphias Hermann, 1907

Al-Mekhwa: April-May.

Spogostylum near *tripunctatum* Pallas in Wiedemann, 1818 [A new record in Saudi Arabia]

Al-Mekhwa: March-April.

Aqabet Al-Baha-Tihama: April-May.

Ghabet Shahba: June.

Tribe: Aphoebantini

Cononedys dichromatopa (Bezzi, 1925) [A new record in Saudi Arabia]

Al-Mekhwa: April-May.

Aqabet Al-Baha-Tihama: April.

Cononedys inornata (Greathead, 1967)

Al-Mekhwa: April-May.

Aqabet Al-Baha-Tihama: April.

Tribe: Exoprosopini

Exoprosopa disrupta tihamae Greathead, 1980

Al-Mekhwa: March-April.

Exoprosopa efflatouni Bezzi, 1925

Al-Mekhwa: March-May.

Exoprosopa eritreae Greathead, 1967

Al-Mekhwa: April-May.

Exoprosopa pharaonis Paramonov, 1928

Al-Mekhwa: March-May.

Exoprosopa pusilla Macquart, 1840

Al-Mekhwa: March-May.

Heteralonia (Homolonia) aegina (Wiedemann, 1828)

Aqabet Al-Baha-Tihama: May.

Heteralonia (Homolonia) megerlei (Meigen, 1820)

Beni Hassan: June.

Ghabet Raghdan: May-June.

Litorhina metapleuris Bezzi, 1924

Adnan (near El-Mandaq): September.

Ligyra astarte Greathead, 1980

Al-Mekhwa: January-February.

Ligyra monacha (Klug, 1832)

Al-Mekhwa: January-February.

Ghabet Raghdan: May-June.

Ligyra virgo (Bezzi, 1924)

Ghabet Raghdan: May-June.

Micomitra chrystallina Bezzi, 1924

Baljurashi: September.

Pachyanthrax circe (Klug, 1832)

Ghabet Raghdan: May-June.

Pterobates chalybaea (Röder, 1887)

Ghabet Raghdan: May-June.

Tribe: Villini

Caecanthrax arabica (Macquart, 1840)

Ghabet Shahba: June.

Exhyalanthrax afer (Fabricius, 1794)

Aqabet Al-Baha-Tihama: April.

Exhyalanthrax beckerianus (Bezzi, 1924)

Ghabet Raghdan: May.

Exhyalanthrax triangularis Bezzi, 1924

Aqabet Al-Baha-Tihama: April.

Villa cana (Meigen, 1804)

Ghabet Raghdan: May.

Villa paniscoides Bezzi, 1912

Jebel El-Baher: June.

Tribe: Xeramoebini

Petrorossia letho (Wiedemann, 1828)

Ghabet Shahba: May-June.

Petrorossia tropicalis Bezzi, 1921

Ghabet Shahba: May-June.

Xeramoeba semirufa (Sack, 1909)

Ghabet Shahba: May-June.

Anthrax alruqibi El-Hawagry, sp. n.

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http://species-id.net/wiki/Anthrax_alruqibi

Figs 2–4

Remarks. This species resembles *Anthrax tureus* Greathead, 1980 in size, vestiture, and venation. However, it differs in having faint brownish spots on r-m crossvein, on the origin of vein R_{2+3} , on the middle of cell br slightly after origin of vein R_1 , and another fainter and smaller spot may be present on crossvein bm-cu. It differs also in having the wing very feebly tinged brownish at the base. Further, the sides of the 2nd and 4th tergites have tufts of long blackish scales and scaly hairs. The epiphallus terminates in a forceps-like process slightly inclined dorsally and continued with a long flange directed ventrally.

Key to the Arabian species of genus *Anthrax* Scopoli

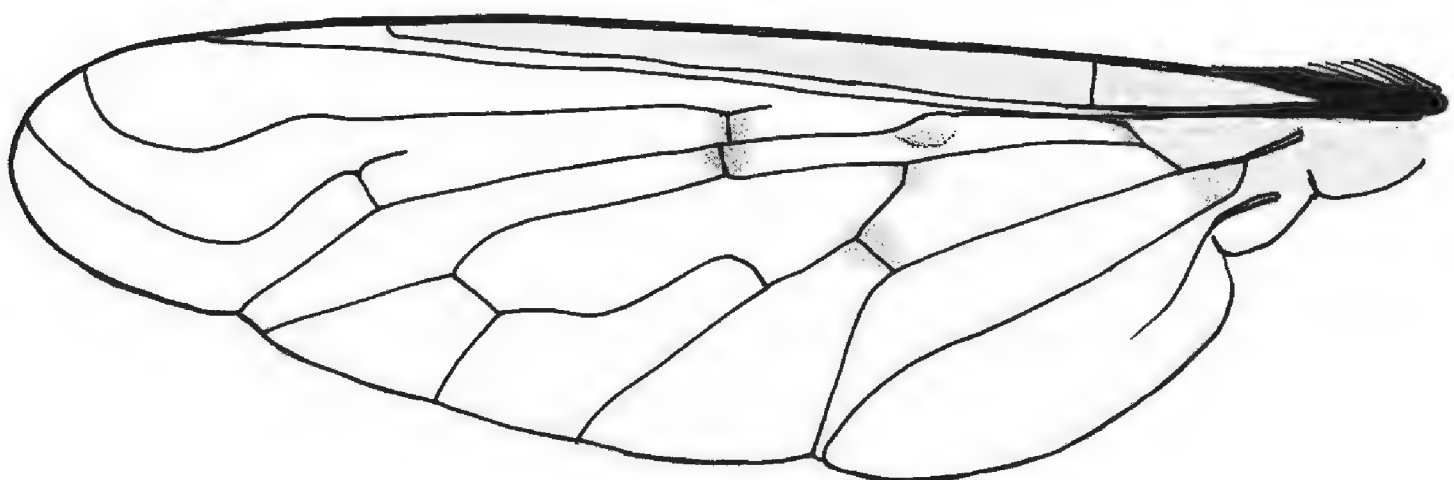
- 1 Wing entirely hyaline, without any infuscated pattern; scales on abdomen mostly white; length 8mm ***tureus* Greathead, 1980**
- Wing with an infuscated pattern composed either of a dark blackish brown infuscation on at least the basal third, or with spots on the cross-veins; scales on abdomen mostly black; length 8mm or more **2**
- 2 Wing pattern composed of spots on cross-veins and with only costal cell and bases of basal cells brownish **3**
- Wing pattern composed of extensive basicostal infuscation or numerous irregular blackish brown confluent spots **4**

- 3 Wing with brown spots on cross-veins, origin of R_{2+3} and fork of R_{4+5} ; sides of abdominal tergites (except the 1st) with black hairs; gonocoxites truncate without long posterior processes; length about 10mm.....***Sticticus* Klug, 1832**
- Wing with spots on cross-veins and origin of R_{2+3} faint brown, fork of R_{4+5} without a spot; sides of 3rd abdominal tergite with tufts of long snowy whitish scales and scaly hairs, and sides of 3 last tergites with long white hairs seen lower to the black bristles, length about 8mm... ***alruqibi* El-Hawagry sp. n.**
- 4 Wing pattern very dark blackish-brown with a clear-cut margin 5
- Wing pattern brown with a diffuse margin merging with darker spots on cross-veins.....***decisus* Bezzi, 1924**
- 5 Clear area with one or two small isolated spots ***aygulus* Fabricius, 1805**
- Clear area without isolated spots.....***fuscipennis* Ricardo, 1903**

Etymology. A patronymic name (*A. alruqibi*) is proposed in honor of Dr Saeid Al-Ruqib, dean of scientific research in Al-Baha University, Saudi Arabia.

Description. *Holotype male.* Dull black medium sized species. Body length: 8 mm. Wing length: 9 mm.

Head: Frons with whitish pruinose, tending to be silvery at margins, covered with black hairs, and yellowish to brownish scales at the middle, and the scales become longer, more dense and pale above the antennae; ocellar tubercle black; occiput with whitish pruinose, whitish scales at eye margin, short sparse black hairs becoming more dense behind the ocellar tubercle, and long brownish scaly hairs around the occipital cavity; face covered with whitish long scaly hairs and long black hairs; eyes at upper part of frons separated by about twice width of ocellar triangle; antennae black with some pale brownish pruinose. **Thorax:** Scutum and scutellum covered with fine white and yellowish to brownish white scaly hairs; bristles and hairs black; anterior corners with snowy white scaly hairs, being shaggy and more slender at fore margin; hind margin of scutellum with short white scales; legs black; hairs and bristles black; coxae and



3 mm

Figure 2. Wing of *Anthrax alruqibi* El-Hawagry sp. n.



Figure 3. Male genitalia of *Anthrax alruqibi* El-Hawagry sp. n.



Figure 4. Spermatheca of female *Anthrax alruqibi* El-Hawagry sp. n.

tibiae covered with white scales, mixed with brownish white ones on tibiae; claws black; pulvilli grayish; wing hyaline (Fig. 2) with a feeble basicostal infuscation, with a faint brownish spots on r-m, on the origin of vein R_{2+3} , on the middle of cell br slightly af-

ter origin of vein R_1 , and another fainter and smaller one may present also on bm-cu crossvein; squama with a short white fringe; plumula white; coastal hook black with white scales; halteres brown with knobs white at tip. **Abdomen:** Corners of 1st tergite with snowy whitish tuft of long scaly hairs; sides of 2nd and 4th tergites with tufts of long blackish scales and scaly hairs; sides of 3rd tergite with tufts of long snowy whitish scales and scaly hairs; bristles of abdomen black and strongly developed; sides of 3 last tergites with long white hairs seen lower to the black bristles; posterior margin of all tergites with snowy whitish scales, becoming more dense and broad at sides especially at sides of 6th tergite; yellowish white scaly hairs and small scales present across mid-line of 2nd, 3rd, and 4th tergites; tergites with dense black scales lying flat especially on sides of 4th and 5th ones. **Hypopygium** (Fig 3): Posterior processes of gonocoxites long and narrow; epiphallus terminating in a forceps-like process slightly inclined dorsally and continued with a long flange directed ventrally. **Paratype female.** Similar to holotype male; spermatheca (Fig. 4) weakly sclerotized, with globular capsules, ejection apparatus short.

Specimens examined. **Holotype male**, Aqabet Al-Baha-Tihama, Al-Baha Province, Saudi Arabia (20.00000°N, 41.43758°E, 1300 m.a.s.l.), 18-19.IV.2012 (El-Hawagry). Paratypes: 1 female, the same holotype data; 1 male, Al-Mekhwa, 21.III.2012 (El-Hawagry); 1 male, Ghabet Raghdan, 12.V.2012 (El-Hawagry); Ghabet Shahba, 8.VI.2012 (El-Hawagry). Holotype and paratypes are deposited in Efflatoun collection, Entomology Department, Faculty of Science, Cairo University, Egypt (EFC).

Family: Mydidae

Subfamily: Mydinae

Mydas sp. [A new record in Saudi Arabia]
Al-Mekhwa: April.

Family: Tabanidae

Subfamily: Tabaninae

Tribe: Tabanini

Tabanus mordax Austen, 1911
Al-Baha: July.

Tribe: Haematopotini

Haematopota coronata Austen, 1908
Al-Mandaq: April.
Jebel Ibrahim: September.
Wadi Diyhan: September.

Haematopota sp.
Wadi Diyhan: May.
Wadi Gala: May.

Family: Therevidae

Subfamily: Therevinae

Thereva sp.

Al-Mekhwa: January-March.

Dhee Ain: April.

Suborder: Cyclorrhapha

Section: Aschiza

Family: Syrphidae

Subfamily: Eristalinae

Tribe: Eristalini

Eristalis taeniops Wiedemann, 1818

Ghabet Raghdan: May-June.

Al-Baha (Jebel El-Baher): June.

Tribe: Milesiini

Chalcosyrphus sp.

Ghabet Raghdan: May-June.

Al-Baha (Jebel El-Baher): June.

Subfamily: Syrphinae

Tribe: Syrphini

Eupeodes corollae (Fabricius, 1794)

Ghabet Raghdan: May-June.

Al-Baha (Jebel El-Baher): June.

Section: Schizophora

Subsection: Acalyptratae

Family: Chloropidae

Oscinella (Cyclocercula) nartshukiana Beschovski, 1978

Baljurashi: May.

Oscinella (Paroscinella) acuticornis Becker, 1912

Baljurashi: May.

Polyodaspis robusta (Lamb, 1918)

Al-Mekhwa: March.

Lagaroceras sequens Becker, 1910

Al-Baha: June.

Family: Diopsidae

Diopsis apicalis Dalman, 1817

Al-Mekhwa: December-February.

Dhee Ain: February-May.

Sphyracephala beccarii (Rondani, 1873)

Al-Mekhwa: December-February.

Dhee Ain: February-May.

Family: Drosophilidae**Subfamily: Drosophilinae****Tribe: Drosophilini**

Drosophila melanogaster Meigen, 1830

Common species.

Drosophila sp.

Al-Baha (Al-Hawya): May-June.

Family: Milichiidae**Subfamily: Madizinae**

Desmometopa varipalpis Malloch, 1927

Al-Mekhwa: March

Family: Tephritidae**Subfamily: Dacinae****Tribe: Dacini**

Dacus frontalis Becker, 1922

Al-Mekhwa: February.

Dhee Ain: September.

Dacus vertebratus Bezzi, 1908

Dhee Ain: September.

Bactrocera zonata (Saunders, 1842)

Al-Mekhwa: February.

Baljurashi: September.

Beni Hassan: August.

Dhee Ain: September.

Subfamily: Tephritinae**Tribe: Noeetini**

Ensina sonchi (Linnaeus, 1764) Host plant: Asteraceae

Ghabet Raghdan: June.

Tribe: Tephritini

Capitites augur (Frauenfeld, 1857) Host plant: *Pulicaria Arabica*
Al-Mekhwa: May.

Family: Ulidiidae

Subfamily: Ulidiinae

Tribe: Ulidiini

Physiphora ?alceae (Preysler, 1791)
Al-Mekhwa: February.

Subsection: Calyptratae

Family: Anthomyiidae

Subfamily Anthomyiinae

Tribe: Anthomyiini

Anthomyia benguellae Malloch, 1924
Ghabet Amadan: May.
Wadi Turabet Zahran: October.

Family: Calliphoridae

Subfamily: Calliphorinae

Calliphora vicina (Robineau-Desvoidy, 1830)
Al-Baha (Jebel Al-Baher): February to July.

Subfamily: Chrysomyinae

Chrysomya albiceps (Wiedemann, 1819)
Al-Baha City: September.
Wadi Turabet Zahran: May.
Chrysomya regalis Robineau-Desvoidy, 1830
Wadi Galla: May.
Wadi Turabet Zahran: May.

Subfamily: Luciliinae

Lucilia sericata (Meigen, 1826)
Wadi Turabet Zahran: May.

Subfamily: Polleniinae

Pollenia hungarica Rognes, 1987

Wadi Dahyan: May.

Wadi Turabet Zahran: May.

Subfamily: Rhiniinae

Cosmina viridia Townsend, 1917

Wadi Galla: May.

Wadi Genouna.

Family: Hippoboscidae**Subfamily Hippoboscinae**

Hippobosca camelina Leach, 1817

All localities (on camels): Throughout the year

Hippobosca equina Linnaeus, 1758 [? A new record in Saudi Arabia]

Al-Baha [Al-Maslakh] (on cattle): Throughout the year

Hippobosca longipennis Fabricius, 1805

All localities (on dogs): Throughout the year

Hippobosca variegata Megerle, 1803

All localities (on camels and cattle): Throughout the year

Subfamily Lipopteninae

Melophagus ovinus (Linnaeus, 1758)

All localities (on sheep and goats): Throughout the year

Family: Muscidae**Subfamily: Atherigoninae****Tribe: Atherigonini**

Atherigona humeralis Wiedemann, 1830

Dhee Ain: October.

Atherigona sp.

Al-Mekhwa: April-July.

Subfamily: Muscinae**Tribe: Muscini**

Musca albina Wiedemann, 1830

Al-Mekhwa: March-July.

Musca domestica domestica Linnaeus, 1758

Common everywhere and all the time.

Musca lucidula (Loew, 1856)

Al-Baha (Shahba): April.

Subfamily: Phaoniinae

Tribe: Phaoniini

Helina coniformis (Stein in Becker, 1903)

Baljurashi: August.

Helina lucida (Stein, 1913)

Baljurashi: March.

Subfamily: Coenosiinae

Tribe: Limnophorini

Lispe nivalis Wiedemann, 1830

Wadi Turabet Zahran: October.

Tribe: Coenosiini

Coenosia humilis Meigen, 1826

Al-Baha (Jebel El-Baher): April-August

Al-Mekhwa: March-September.

Family: Oestridae

Oestrus ovis (Linnaeus, 1758)

Al-Maslakh (on sheep): March to August.

Przhevalskiana silenus Brauer, 1858

Al-Maslakh (on goats): March to August.

Family: Sarcophagidae

Subfamily: Sarcophaginae

Engelisca adhamae Lehrer and Abou-Zied, 2008

Al-Baha (Jebel Al-Baher): March to August.

Liosarcophaga babiyari (Lehrer, 1995)

Al-Baha (Jebel Al-Baher): March to November.

Sarcophaga dux Thompson, 1869

Al-Baha (Jebel Al-Baher): February to September.

Family: Tachinidae

Exorista sp.

Ghabet Shahba: May-July.

* **Collecting methods of specimens of the order Diptera:** Aerial nets, sweeping nets and malaise traps were the main methods. However, other methods were effective too as bait traps for Calliphoridae and Sarcophagidae; yellow pan traps for Chloropidae, Chironomidae and Syrphidae; sticky traps for Psychodidae; and light traps for Ceratopogonidae and Psychodidae.

Order: Hymenoptera**Suborder: Apocrita****Family: Agaonidae****Subfamily: Otitesellinae**

Otitesella rotunda van Noort, 1997

Jebel Ibrahim: ?

Family: Apidae**Subfamily: Apinae****Tribe: Apini**

Apis florae Fabricius, 1787

Wadi Galla: May-September.

Wadi Turabet Zahran: May-October.

Dhee Ain: May-August.

Apis mellifera Linnaeus, 1758

Common everywhere and all the time

Tribe: Melectini

Melecta sinaitica (Alfken, 1937)

Dhee Ain: May.

Subfamily: Xylocopinae**Tribe: Xylocopini**

Xylocopa aestuans (Linnaeus, 1758)

Wadi Turabet Zahran: March-April.

Xylocopa sp.

Ghabet Raghdan: May-June.

Family: Braconidae

Subfamily: Braconinae

Tribe: Aphrastobraconini

Iphiaulax agnathus Kohl, 1906

Al-Baher: May.

Family: Crabronidae

Subfamily: Bembicinae

Tribe: Bembicini

Bembix oculata Panzer, 1801

Jebel El-Baher: June-July.

Bembix sp.

Al-Mekhwa: February-April.

Subfamily: Crabroninae

Tribe: Crabronini

Dasyproctus arabs Kohl, 1894

Jebel El-Baher: May-July.

Subfamily: Philanthinae

Cerceris albicincta Klug, 1845

Ghabet Shahba: June-August.

Cerceris alboatra Walker, 1871

Jebel El-Baher: May-August.

Cerceris sabulosa Panzer, 1799

Jebel El-Baher: May-August.

Philanthus triangulum Fabricius, 1775

Jebel El-Baher: May-August.

Family: Eumenidae

Eumenus sp.

Wadi Galla: May.

Eumenes dimidiatipennis Saussure, 1852

Wadi Turabet Zahran: May-August.

Family: Formicidae**Subfamily: Aenictinae**

Aenictus arabicus Sharaf & Aldawood, 2012-12-23

Aqabet Al-Baha-Tihama: April.

Subfamily: Dolichoderinae

Tapinoma wilsoni Sharaf & Aldawood, 2012

Dhee Ain: May-September.

Technomyrmex briani Sharaf, 2009

Ghabet Shahba: May.

Technomyrmex setosus Collingwood, 1985

Baljurashi (Al-Qama'): May.

Ghabet Shahba: May.

Wadi El-Zarayeb: May.

Subfamily: Dorylinae

Dorylus sp.

Wadi Turabet Zahran: May.

Subfamily: Formicinae

Anoplolepis longitarsus Collingwood & Agosti, 1996

Baljurashi (Al-Qama'): May.

Camponotus aegyptiacus Emery, 1915

Wadi Al-Uqdah: August.

Wadi Aridah: September.

Dhee Ain: May.

Camponotus iglii Forel, 1894

Wadi El-Zarayed: May.

Dhee Ain: May.

Camponotus sericeus Fabricius, 1798

Wadi Aridah: September.

Wadi Dhiyan: September.

Dhee Ain: May.

Camponotus flavomarginatus Mayr, 1862

Al-Baha City: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Camponotus xerxes Forel, 1904

Wadi Aridah: October.

Camponotus sp.

Amadan: May.

Al-Baha City: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Ghabet Shahba: May.

Wadi El-Zarayeb.

Cataglyphis albicans (Roger, 1859)

Al-Baha City: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Ghabet Shahba: May.

Cataglyphis desertorum (Forel, 1894)

Wadi Aridah: February.

Cataglyphis emmae (Forel, 1909)

Al-Baha: March.

Cataglyphis holgerseni Collingwood & Agosti, 1996

Al-Baha City: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Ghabet Shahba: May.

Cataglyphis niger (Andre, 1882)

Wadi Arida: March.

Cataglyphis semitonsa Santschi, 1926

Al-Baha: March.

Savignyi savignyi (Dufour, 1862)

Amadan: May.

Ghabet Raghdan: May.

Lepisiota canescens Emery, 1897

Al-Baha: March.

Lepisiota obtusa (Emery, 1901)

Amadan: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Wadi El-Zarayeb: May.

Lepisiota opaciventris (Finzi, 1936)

Baljurashi (Al-Qama'): May.

Wadi El-Zarayeb: May.

Paratrechina longicornis (Latreille, 1802)

Dhee Ain: May.

Subfamily: Myrmicinae

Carebara abuhurayri Sharaf & Aldawood, 2011

Dhee Ain: May.

Crematogaster affabilis Forel, 1907

Amadan: May.

Al-Baha City: May.

Dhiyan: September.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Wadi El-Zarayeb: May.

Leptothorax angulatus Mayr, 1862

Aridah: September.

Leptothorax sp.

Ghabet Shahba: May.

Messor ebininus Santschi, 1927

Amadan: May.

Baljurashi (Al-Qama'): May.

Ghabet Raghdan: May.

Wadi El-Zarayeb: May.

Messor sp.

Amadan: May.

Wadi El-Zarayeb: May.

Monomorium destructor (Jerdon, 1851)

Dhee Ain: May.

Monomorium dryhimi Aldawood & Sharaf, 2011

Amadan: May.

Baljurashi (Al-Qama'): May.

Monomorium ?exiguum Forel, 1894

Dhee Ain: May.

Monomorium mayri Forel, 1902

Amadan: May.

Ghabet Raghdan: May.

Ghabet Shahba: May.

Wadi El-Zarayeb: May.

Monomorium salomonis (Linnaeus, 1758)

Amadan: May.

Baljurashi (Al-Qama'): May.

Ghabet Shahba: May.

Monomorium sarawatensis Sharaf & Aldawood sp. n.

Aqabet Al-Baha-Tihama: April.

Monomorium sp.

Ghabet Shahba: May.

- Dhee Ain: May.
- Nesomyrmex angulatus* Mayr, 1862
Baljurashi (Al-Qama'): May.
- Dhee Ain: May.
- Pheidole megacephala* (Fabricius, 1793)
Wadi Al-Uqdah: August.
- Pheidole ?sculpturata* Mayr, 1866
Dhee Ain: May.
- Pheidole* sp.
Amadan: May.
Baljurashi (Al-Qama'): May.
Ghabet Raghdan: May.
Ghabet Shahba: May.
Wadi El-Zarayeb: May.
- Solenopsis elhawagryi* Sharaf & Aldawood, 2012
Baljurashi (Al-Qama'): May.
- Strumigenys* sp.
Dhee Ain: September.
- Tetramorium amalae* Sharaf & Aldawood, 2011
Amadan: May.
- Tetramorium caldarium* Roger, 1857
Baljurashi (Al-Qama'): May.
- Tetramorium sericeiventris* Emery, 1877
Amadan: May.
Baljurashi (Al-Qama'): May.
Ghabet Raghdan: May.
Ghabet Shahba: May.
Wadi El-Zarayeb: May.
- Tetramorium latinode* Collingwood & Agosti, 1996
Amadan: May.
- Tetramorium caldarium* (Roger, 1857)
Al-Baha City: May.
Baljurashi (Al-Qama'): May.
- Tetramorium depressiceps* Menozzi, 1933
Amadan: May.
Al-Baha City: May.
Ghabet Raghdan: May.
Ghabet Shahba: May.
- Tetramorium* sp.1
Al-Baha City: May.
Baljurashi (Al-Qama'): May.
- Tetramorium* sp.2
Dhee Ain: May.

Subfamily: Ponerinae*Anochetus traegaordhi* Mayr, 1904

Dhee Ain: September.

Subfamily: Pseudomyrmecinae*Tetraponera bifeveolata* Mayr, 1895

W. Ibrahim: March.

W. Sanakah: September.

***Monomorium sarawatensis* Sharaf & Aldawood, sp. n.**

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http://species-id.net/wiki/Monomorium_sarawatensis

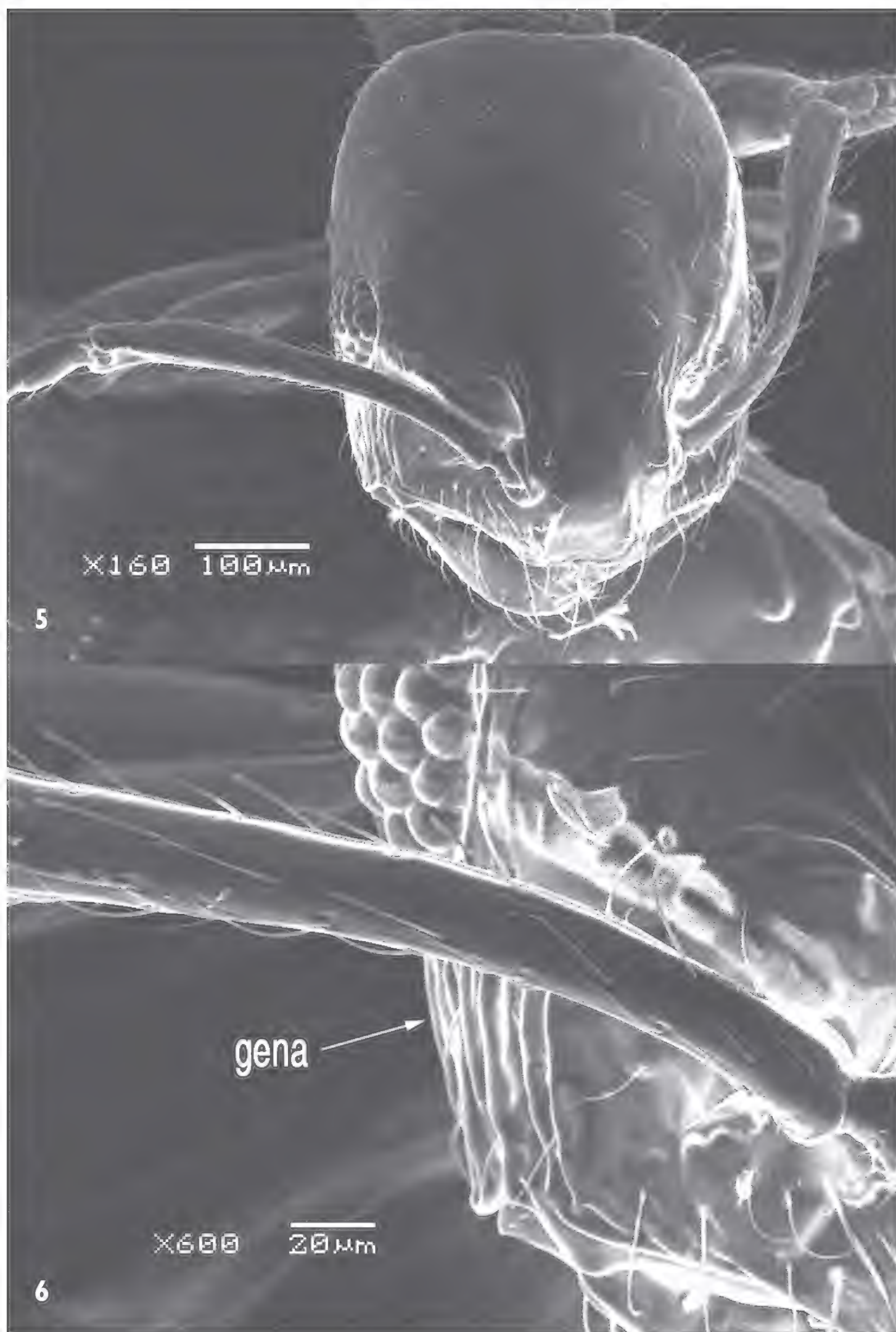
Figs 5–15

Measurements and indices:

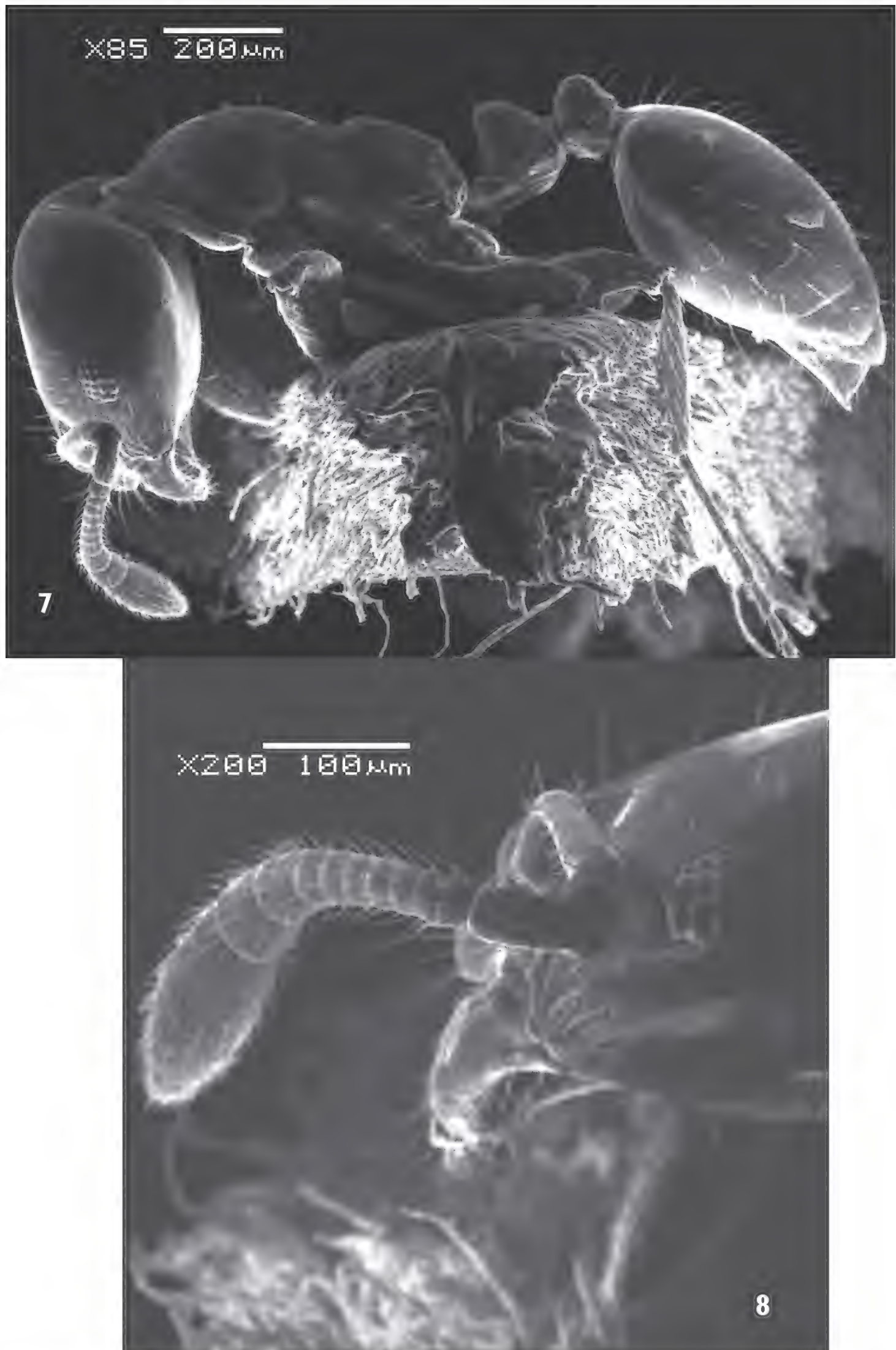
- TL** Total Length; the outstretched length of the ant from the mandibular apex to the metasomal apex.
- HW** Head Width; the maximum width of the head behind eyes in full face view.
- HL** Head Length; the maximum length of the head, excluding the mandibles.
- CI** Cephalic Index ($HW \times 100/HL$).
- SL** Scape Length, excluding basal neck.
- SI** Scape Index ($SL \times 100/HW$).
- EL** Eye Length; the maximum diameter of the eye.
- ML** Mesosoma Length; the length of the mesosoma in lateral view, from the point at which the pronotum meets the cervical shield to the posterior base of the propodeal lobes or teeth.
- PRW** Pronotal width, maximum width in dorsal view.
- PL** Petiole Length; the maximum length measured in dorsal view, from the anterior margin to the posterior margin.
- PW** Petiole Width; maximum width measured in dorsal view.
- PPL** Postpetiole Length; maximum length measured in dorsal view.
- PPW** Postpetiole Width; maximum width measured in dorsal view.

All measurements are in millimeters and follow the standard measurements (Bolton 1987).

This new species is a member of the *Monomorium monomorium*-group as defined by Bolton (1987), but it does not fit any of the *Monomorium* species in Bolton's key to the Afrotropical species or the key to the Arabian species given by Collingwood and Agosti (1996). *Monomorium sarawatensis* superficially seems to be similar to *M.*



Figures 5–6. SEM of *Monomorium sarawatensis* sp.n., paratype worker, head in full-face view.



Figures 7–8. SEM of *Monomorium sarawatensis* sp.n., paratype worker 7 body in profile, 8 head in profile.

affabile Santschi and *M. malatu* Bolton described from Zaire. The three species share the following characters: dorsum and sides of propodeum and waist blanketed everywhere with dense reticulate-punctate sculpture; fourth (basal) tooth of mandible slightly smaller than the third, and not broadly separated; genae faintly longitudinally striated; body pilosity clubbed. However, *sarawatensis* can be easily separated by the uniform yellow color, whereas the color of the latter species is dark brown to blackish-brown. In comparison with *affabile*, *sarawatensis* is consistently larger (TL 1.77-2.13), versus (TL 1.5) and the eyes are smaller (EL 0.17-0.22 × HW, versus EL 0.24 × HW).

The type locality is a farm planted with *Annona squamosa* L. (Annonaceae), *Prunus persica* (L.), *P. Amigdalus* (Mill.) (Rosaceae), *Psidium guajava* L. (Family: Myrtaceae), *Zea mays* ssp. *mays* L. (Family: Poaceae), in addition to banana, and mango. The new species was found nesting inside a woody fruit of *Annona squamosa*. No males or queens were seen.

Diagnosis: This new species is characterized by a combination of the following characters: eyes with five-six ommatidia in the longest row; genae faintly longitudinally striated; metanotal groove deep and broad; propodeal dorsum making a weak obtuse angle with propodeal declivity; mesosoma and waist densely reticulate-punctate; body pilosity clubbed.

Key to the Arabian species of the *Monomorium monomorium*-group

- 1 Antennae with 11 segments 2
- Antennae with 12 segments 5
- 2 Terminal funicular segment broadly swollen..... ***clavicorne* Andre, 1883**
- Terminal funicular segment enlarged, not Swollen 3
- 3 Mesosoma without hairs.....***aeayade* Collingwood & Agosti, 1996**
- Mesosoma with hairs 4
- 4 Mesonotum with at least six pairs of hairs, two on pronotum, four on mesonotum; antennal scapes shorter (SI 74-84); CI higher (74–80)
..... ***exiguum* Forel, 1894**
- Mesosoma with fewer hairs, one pair on pronotum and two one mesonotum; antennal scapes slightly longer (SI 90); CI smaller (71).....
..... ***baushare* Collingwood & Agosti, 1996**
- 5 Mesosoma and waist densely and conspicuously reticulate-punctate
..... ***sarawatensis* sp. n.**
- Mesosoma and waist smooth and shining 6
- 6 Head, in full-face view, with long hairs surrounding posterior margin and head sides forming a fringe; metanotal groove shallow
..... ***qarabe* Collingwood & Agosti, 1996**
- Head, in full-face view, without a fringe of long hairs; metanotal groove sharp and distinct..... 7
- 7 Larger yellow species; TL 1.70–2.30, HW 0.40; metanotal groove sharp but too small to break the dorsal outline; pronotum with a single pair of curved hairs..... ***montanum* Collingwood & Agosti, 1996**

- Smaller yellowish to light brownish yellow species, first and second gastral tergites with light brownish bands; TL 1.42–1.84; HW 0.32–0.36; metanotal groove sharp and distinctly breaks the dorsal outline; anterior pronotal margin with two pairs of hairs, middle part of pronotum with a single pair ..
..... *dryhimi* Aldawood & Sharaf, 2011

Description. Measurements: Holotype *worker*. TL 1.98, HL 0.52, HW 0.42, SL 0.38, ML 0.56, EL 0.08, PRW 0.25, PL 0.14, PW 0.12, PPL 0.11, PPW 0.14, SI 90, CI 81.

Paratypes. TL 1.77–2.13, HL 0.48–0.53, HW 0.36–0.42, SL 0.30–0.39, ML 0.45–0.56, EL 0.07–0.08, PRW 0.21–0.25, PL 0.09–0.14, PW 0.09–0.12, PPL 0.08–0.11, PPW 0.11–0.14, SI 81–95, CI 75–84.

(N=12).

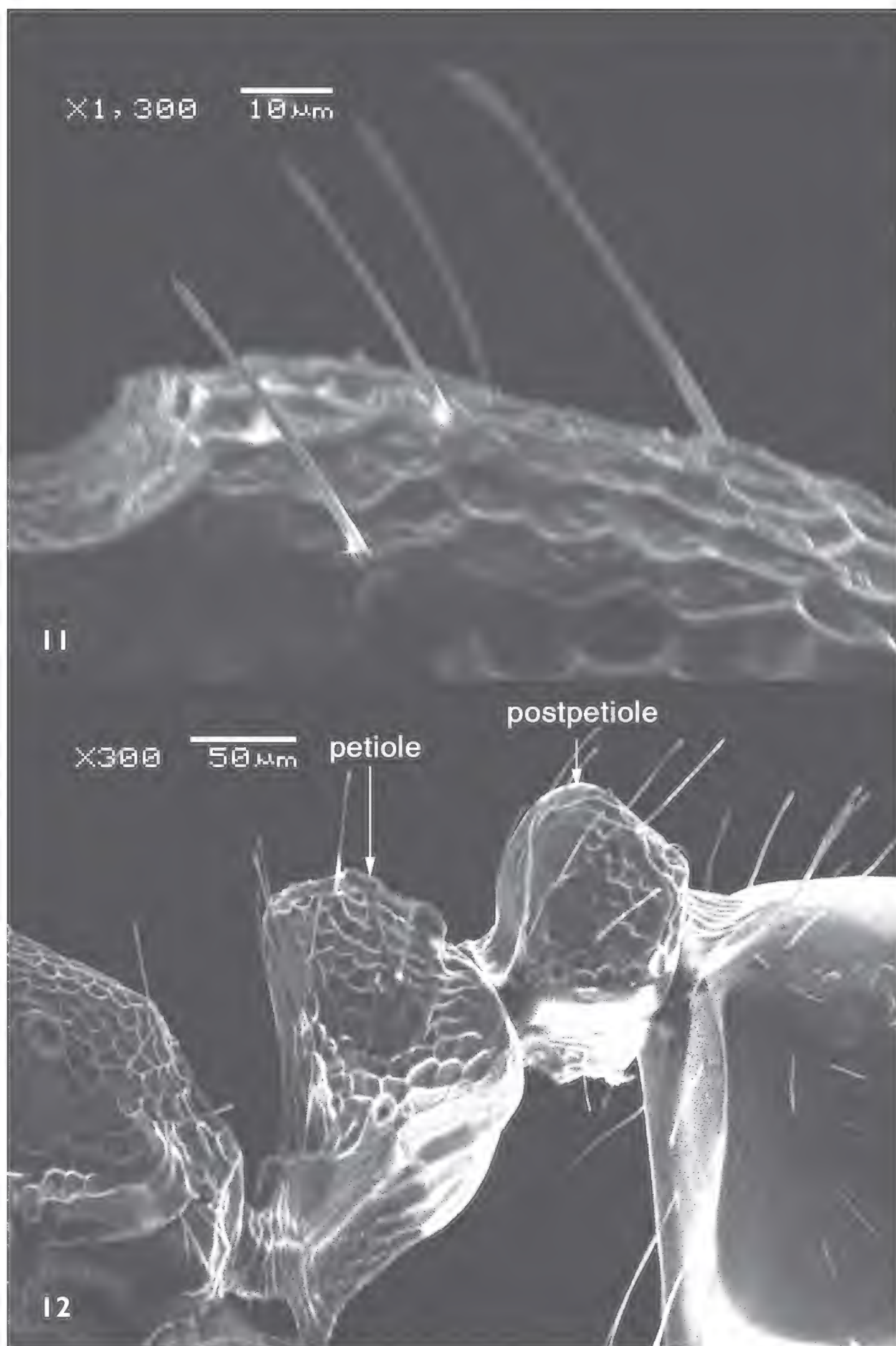
Holotype worker. Head distinctly longer than broad, with a nearly straight posterior margin and shallowly convex sides; head dorsum smooth and shining with few scattered hair-pits; anterior clypeal margin feebly concave between a pair of obtusely projecting angles which separate anterior and lateral margins; clypeal carinae broadly separated and subparallel; eyes with five-six ommatidia in the longest row (EL 0.17–0.22x HW). With head in profile the posterior margins of eyes at the midlength of sides; antennal scapes, when laid back from their insertions, failing to reach posterior margin of head; genae faintly longitudinally striate. Mesosoma in lateral view with the promesonotum straight or feebly convex; metanotal groove deep and broad; propodeal dorsum making a weak obtuse angle with propodeal declivity; mesosomal pilosity few and sparse, two pairs of erect setae on pronotum, five or more on mesonotum, three on propodeum; propodeal spiracle small and pinhole-like; mesosoma densely reticulate-punctate except for pronotal sides which are nearly smooth and shining. Petiolar node high and acuminate in profile, usually with two pairs of erect setae, petiolar peduncle thick and short. Postpetiole in dorsal view clearly broader than long. Petiole and postpetiole densely reticulate-punctate. Color uniformly yellow. Body pilosity clubbed.

Specimens examined. Holotype worker, Aqabet Al-Baha-Tihama, Al-Baha Province, Saudi Arabia (20.00000°N, 41.43758°E, 1300 m.a.s.l.), 19.IV.2012 (M. R. Sharaf), deposited in King Saud Museum of Arthropods (**KSMA**), College of Food and Agriculture Sciences, King Saud University, Riyadh, Kingdom of Saudi Arabia.

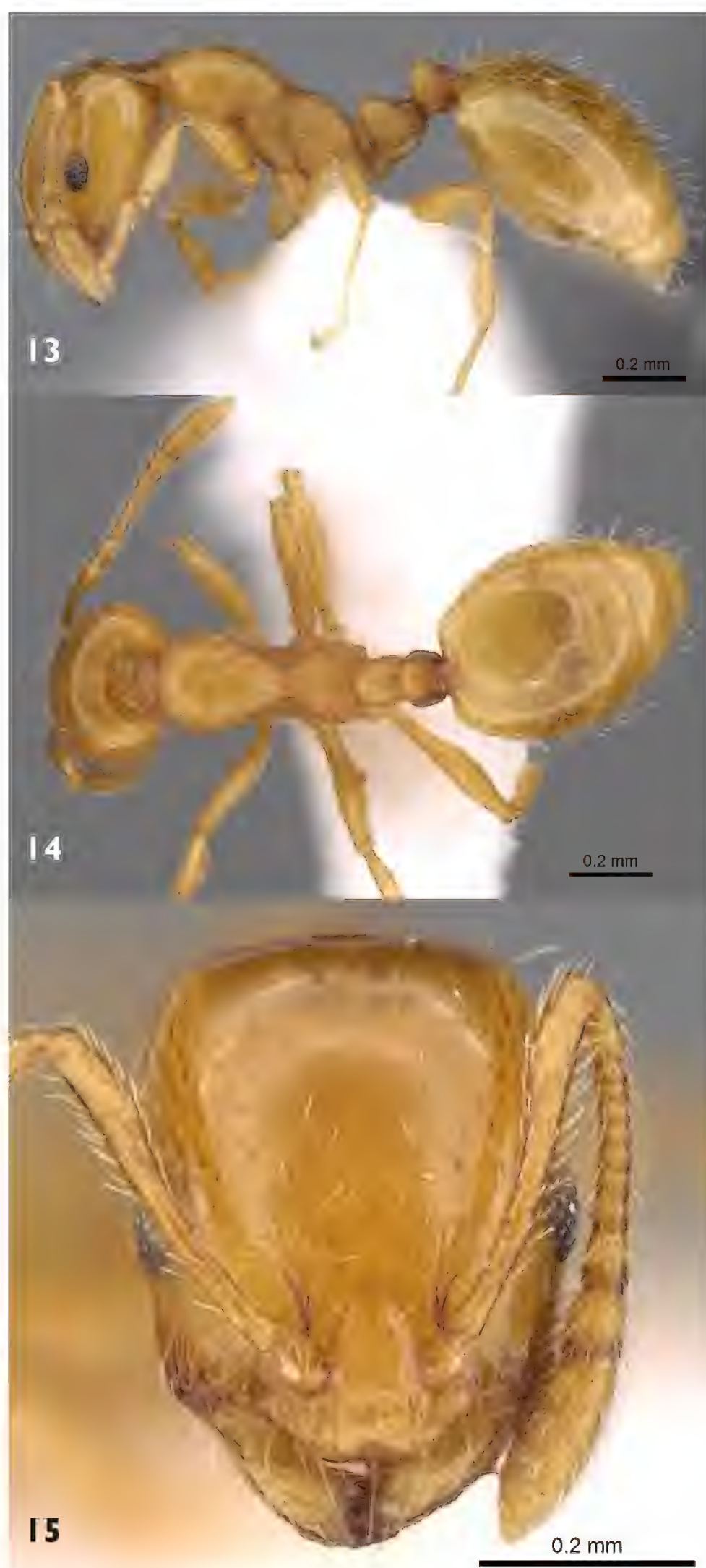
Paratypes. 33 workers, same locality and data as holotype; 1 deposited in the Muséum d'Histoire Naturelle, Geneva, Switzerland (Dr Bernhard Merz); 1 in Naturhistorisches Museum, Basel, Switzerland (Mrs. Isabelle Zürcher-Pfander); 1 in California Academy of Science (Dr Brian Fisher); 1 in the Museum of Comparative Zoology, Harvard University, Cambridge, USA (Prof. E. O. Wilson); 1 in the Division of Entomology (Snow Entomological Collections), University of Kansas Natural History Museum, Lawrence, Kansas, USA (Prof. Michael S. Engel); 1 in World Museum Liverpool, Liverpool, U.K (Mr. Tony Hunter), 1 in The Natural History Museum, London (Mr. Barry Bolton); the remaining paratypes are in the King Saud Museum of Arthropods, King Saud University, Riyadh, Saudi Arabia.



Figures 9–10. SEM of *Monomorium sarawatensis* sp.n., paratype worker **9** mesosoma in profile **10** propodeal spiracle.



Figures 11–12. SEM of *Monomorium sarawatensis* sp. n., paratype worker **11** clubbed hairs **12** petiole and postpetiole.



Figures 13–15. Automontage of *Monomorium sarawatensis* sp.n., paratype worker **13** body in profile **14** body in dorsal view **15** head in full-face view.

Note. Specimens were photographed by Erin Prado using a JVC KY-F70B 3CCD digital camera attached to a Leica M420 stereomicroscope. All digital images were processed using Auto-Montage (Syncroscopy, Division of Synoptics Ltd, USA) software. Images of the specimens are available in full color on www.antweb.org.

Family: Ichneumonidae

Subfamily: Pimplinae

Pimpla sp.

Jebel El-Baher: May-June.

Family: Pompilidae

Subfamily: Pepsinae

Tribe: Pepsini

Cyphononyx bretonii (Guérin, 1843)

Wadi Turabet Zahran: May.

Family: Scoliidae

Subfamily: Campsomerinae

Tribe: Campsomerini

Micromeriella hyalina (Klug, 1832)

Gebel El-Baher: May.

Campsomeriella collaris (Fabricious, 1775)

Dhee Ain: May-July.

Campsomeriella thoracica (Fabricius, 1787)

Al-Baha City (Jebel El-Baher): May.

Subfamily: Scoliinae

Scolia sp.

Al-Mekhwa: March.

Al-Baha City (Jebel El-Baher): May.

Family: Sphecidae

Subfamily: Ammophilinae

Ammophila arabica Kirby, 1900

Al-Mekhwa: March.

Jebel El-Baher: May-August.

Ammophila erminea Kohl, 1901

Jebel El-Baher: May-August.

Podalonia tydei (Le Guillou, 1841)

El-Baha: June.

Subfamily: Sphecinae

Sphex fumicatus Christ, 1791

Ghabet Raghdan: June.

Family: Vespidae

Subfamily: Eumininae

Delta hottentotum elegans (De Saussure, 1852)

Ghabet Raghdan: June.

Delta dimidiatipenne (de Saussure, 1852)

Ghabet Raghdan: June.

Subfamily: Polistinae

Tribe: Ropalidiini

Belonogaster juncea juncea (Fabricius, 1781)

Gebel El-Baher: May.

Subfamily: Vespinae

Vespa orientalis Linnaeus, 1771

Wadi Turabet Zahran: May-August.

* **Collecting methods of specimens of the order Hymenoptera:** Aerial nets, sweeping nets and malaise traps were the main methods; however, the yellow pan traps were effective for small Hymenoptera as well, and ants (Formicidae) were collected using tray sifting.

Faunal richness and Zoogeographic affinities

25% of the known faunal richness has been accounted for by order Lepidoptera, Diptera comprise 22%, Coleoptera 18%, Hymenoptera 14%, Hemiptera 7%, and Orthoptera 6%. The other insect orders made up 8% of all recorded species.

Insect species richness in Al-Baha Province has been compared between sectors, and with the total species richness in the province as a whole. Results demonstrated that the two sectors (Tihama and Al-Sarah) are varied in their species composition (Fig. 16). The figure summarizes variation in species composition in two ways: firstly, by the number of species shared between the two sectors, and secondly, by the number of species unique to each sector. It was found that 465 species have been recorded from

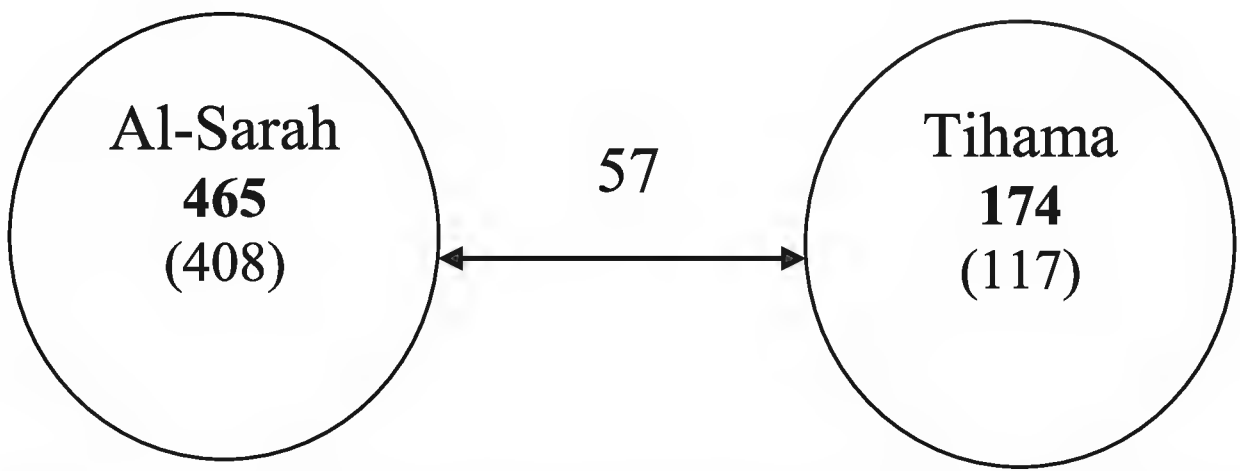


Figure 16. Insect species in the two main sectors (Tihama and Al-Sarah) of Al-Baha Province. The total number of species in each sector is given in bold, the number of species occurring in common in the two sectors is given along the line joining them, and the number of species unique to each sector is given within parentheses within circles.

Table 1. Zoogeographic affinities of insect species of Al-Baha Province.

Region	Affinities (%)	
	Tihama sector	Al-Sarah sector
Afrotropical	69	60
Palearctic	23	27
Oriental	2	3
Undetermined	6	10

Al-Sarah, with 408 of them (88%) unique; while 174 species have been recorded from Tihama, with 117 of them (67%) unique. However, only 57 species have been recorded as common to both sectors, representing only about 10% of all species recorded from the province as a whole. These results clearly suggest that each of the two sectors of Al-Baha Province (Tihama and Al-Sarah) has its own insect community.

Most of insect species here recorded from Al-Baha Province are characteristic of the Afrotropical region. Tabel (1) indicates the broad scale distribution patterns suggesting a closer affiliation to the Afrotropical region than to the Palearctic region or the Eremic zone. This affiliation was obviously greater in Tihama (69%) than in Al-Sarah (60%). The study showed Palearctic elements comprising 27% or less in both sectors, in addition to some few Oriental elements (3% or less).

Discussion

The south-western part of Saudi Arabia, including Al-Baha Province, is considered by many authors to be the most important part of the country and the Arabian Peninsula in general in terms of vegetation and speciation. This area is similar to the high altitude mountains of north-eastern and eastern parts of Africa, both floristically and ecologically (Zohary 1973 and Eig 1938).

Insect diversity (richness) shows a positive correlation with plant diversity (El-Moursy et al. 2001), in other words, the species diversity of consumers should depend to some degree upon the diversity, as well as the productivity, of their food resources (Davidson 1977). Hence, the variation in insect richness in the two sectors of Al-Baha Province seems to reflect their varying vegetation patterns. This variation in insect richness could also be a result of the distance (more than 25km) and altitude (more than 1500 m) between the two sectors, where distance and height could affect the ability of species to disperse between sectors (Fisher 1996). Consequently, each of the two sectors has its own insect community. There is also little doubt that abiotic conditions (relative humidity, soil moisture, temperature, etc.) may affect this pattern of insect distribution in Al-Baha Province.

Considering the insect fauna in Al-Baha Province as a whole, we can obviously conclude that Al-Baha has an extraordinary complex and interesting insect fauna. This may be attributed to its geographical position at the junction of two of the world's main zoogeographical regions: the Afrotropical and the Palaearctic (Hölzel 1998).

The vegetation of Arabian Peninsula is more or less similar to that of the north-eastern and northern parts of the African Continent. So, some present day biogeographers are of the opinion that the biogeographical divisions within the northeastern and eastern parts of Africa should be extended towards east to cover the regions within the Arabian Peninsula too, namely "Afrotropical Archipelago", covering the high altitude regions of the southern Al-Sarawat Mountains (Zohary 1973; Eig 1938).

Indeed, the present preliminary study is not sufficient to draw more than general conclusions about insect zoogeography in Al-Baha Province. However, the insect faunal composition in this region has an Afrotropical flavor as the Afrotropical elements have been predominantly indicated. Consequently, we tend to agree with those biogeographers who believe that parts of the Arabian Peninsula, including Al-Baha Province, should be included in the Afrotropical region rather than in the Palaearctic region or the Eremic zone, but we cannot indicate the northern border of this region exactly. Especially, Zoogeographical regions often have definable boundaries due to physical barriers, such as mountains, deserts, or water. However, where no such barriers exist, each region gradually merges with the next, pockets of one extending some way into the other due to variable environmental conditions. Such transitional zones may themselves have certain definable characteristics and are often classified as distinct regions. The desert between the Palaearctic and Afrotropical regions is one such zone, and is known as the Afroeremic zone (de Lattin 1967), the Eremic zone (Uvarov 1938; Greathead 1980; Larsen 1984) or the Saharo-Arabian subregion (Takhtajan 1986). However, the northern border of the Afrotropical Region was proposed to be along the Tropic of Cancer (Sclater 1858; Wallace 1876).

We think that the exact indication of the northern border of the Afrotropical region requires more study, not only of the insect fauna but also of the flora and other animal faunas in central deserts, south, south-eastern, and south-western parts of Saudi Arabia.

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